Welcome to KingStat 2008

April 10, 2009

Welcome to the 2009 performance report of the King County Department of Natural Resources and Parks (DNRP). Our department has been using performance information for many years to improve service delivery, get feedback on customer priorities, and improve accountability with the elected leadership, our stakeholders, and the public.

Theresa Jennings
Former DNRP DIrector

We produce this report annually for several purposes, including:

- For Elected Officials in King County, the report helps us remain accountable by highlighting achievements and identifying areas for improvement across a range of program areas — environmental, people/communities, and fiscal/economic.
- For DNRP Leadership, this report helps us understand what strategies are succeeding, and if not it, we are in a better position to adjust our methods and/or resources to improve the outcome.
- For our many public, private, and community-based stakeholders, this report provides a snapshot of our current priorities and whether we are succeeding at achieving our goals. It also provides the Department with a wonderful opportunity to obtain feedback from our stakeholders on how we are doing.
- For the many DNRP employees, this report provides an overview of our priorities, establishes targets we are striving for, and shows how we're doing on our most critical success measures.

The DNRP goals, performance measures, which have evolved over the years, are driven largely by:

- Direction from the King County Executive and policy directives of the King County Council.
- Feedback and suggestions of other governments, special districts, non-profit and community-based partner organizations, residents, and businesses.
- Guidance and ambitions of employees and internal teams that help establish targets for achievements at the program level.

The results presented are primarily from the 2008 calendar year, though for a very few measures the results are available less frequently. For example, some customer satisfaction surveys are only conducted every other year. The goals and performance measures of this report cover all DNRP programs funded in our 2008 budget, including the wastewater treatment division, the solid waste division, the parks division, and the water and land resources division, as well as the directors office and King County GIS Center.

Visual representation of DNRP's KingStat Program

DNRP Vision Mission and Goals

DNRP Equity

King County AIMs High

DNRP Budget And Organization Chart

Previous Reports

2007 KingStat

2006 KingStat

2005 Measuring for Results
- 7meg PDF

2004 Measuring for Results
- 4.4meg PDF

2003 Measuring for Results

We are proud to have received the Association of Government Accountants 'Certificate of Excellence in Performance Reporting' for the past several years.

In 2008, DNRP took two significant steps forward to improve performance.

First, we consolidated our goals to reflect the three primary domains of sustainability:

- Environment,
- People and communities, and
- Fiscal responsibility/economic prosperity.

Shifting to a triple-bottom-line performance framework helps improve decision making by establishing a consistent basis for managing resources across lines of business.

Second, we enhanced internal accountability by cascading organizational performance measures out to the section level. By extending performance measures to smaller levels of our organization, we better connect and align branches of our organization, strengthen the assignment of responsibility, and increase transparency and accountability.

We are also building on recent accomplishments, including the tracking and reporting on measures of equity in service delivery, and, together with partners, addressing disproportionate outcomes in community conditions that DNRP services and facilities can help remedy. Our investments in regional trails, for example, are being evaluated for the degree they will help remedy disproportionate levels of physical activity in communities across King County.

Key focus areas for DNRP performance improvements in 2009 include:

- Strengthening measures of efficiency in multiple program areas,
- Expanding measures of equity and fairness in service delivery, and
- Improving measures of performance for capital projects.

Recognizing that performance improvement is a journey, not a destination, we welcome your ideas regarding other measures we should consider including in this report, and your reaction to the priorities DNRP is currently addressing. Thank you for your feedback.

- 4.3meg PDF

News

King County performance reporting wins national awards

Updated: August 18, 2009

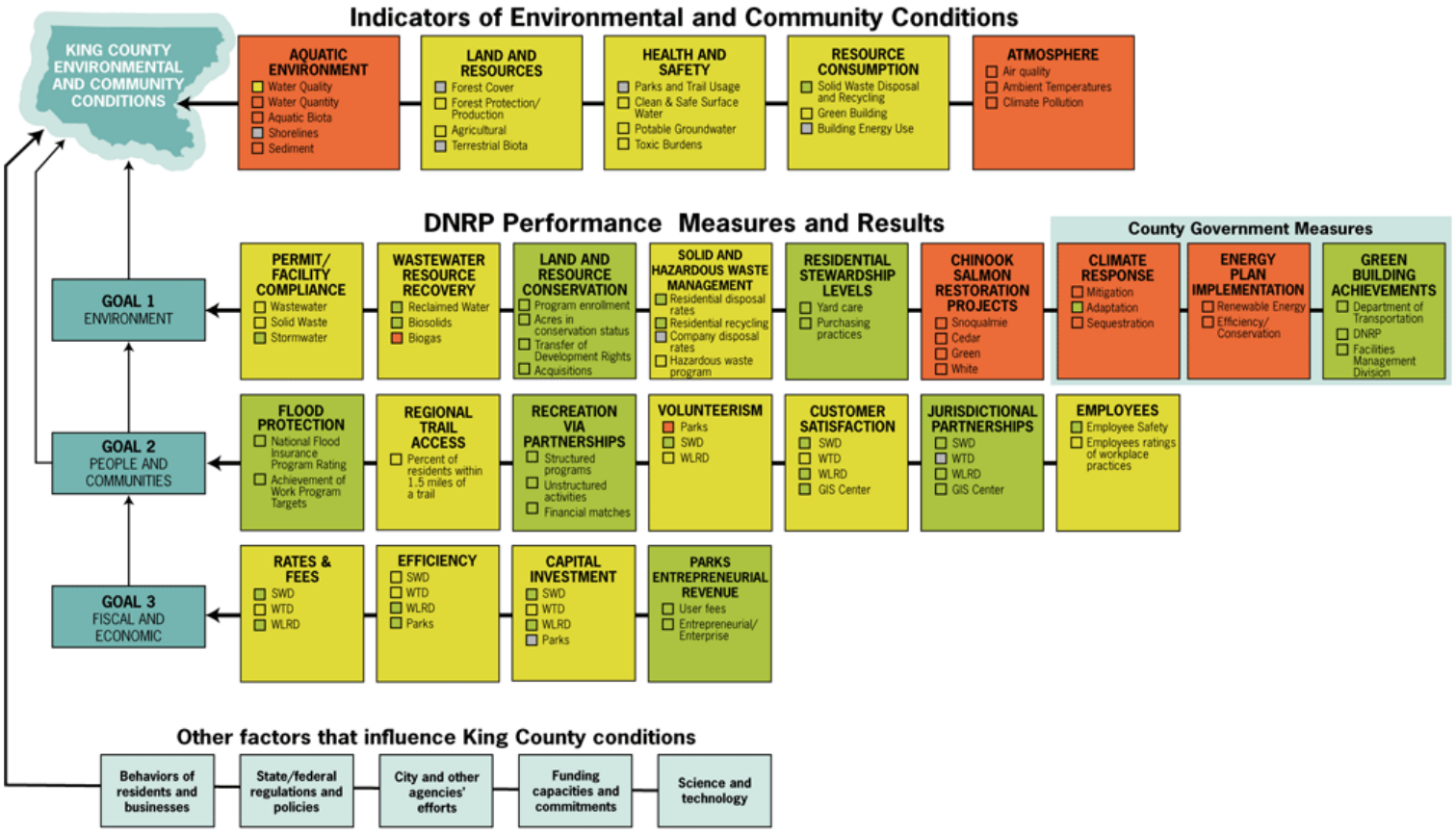
HOW ARE WE DOING? - 2008 ARCHIVE

COMMUNITY AND ENVIRONMENTAL INDICATORS

Aquatic Environment | Land & Resources | Health & Safety | Resource Consumption | Atmosphere

PERFORMANCE MEASURES

Environment | People and Communities | Fiscal and Economic



Indicators Legend

- Meets or exceeds standard, goal, or improved from prior years
- Approaching standard goal, or steady with prior years
- Below standard, goal, or decline from prior years
- Insufficient data

Performance Measures Legend

- Meets or exceeds target
- Approaches target (less than 10% away from target)
- Needs improvement (more than 10% away from target)

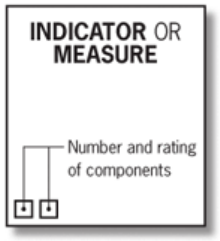
Acronyms

GIS King County GIS (Geographic Information System) Center

SWD Solid Waste Division

WLR Water & Land Resources Division

WTD Wastewater Treatment Division



print

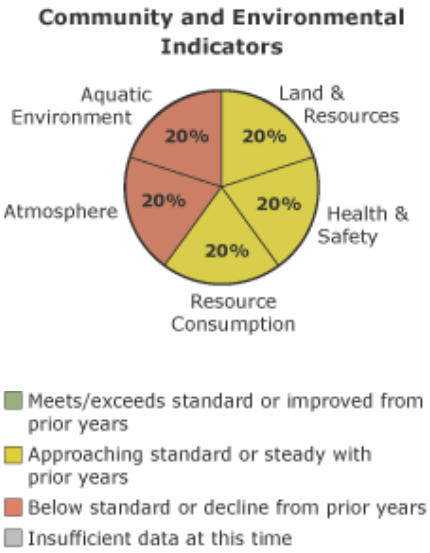
COMMUNITY AND ENVIRONMENTAL INDICATORS

DNRP 2008 COMMUNITY AND ENVIRONMENTAL INDICATORS

In simplest terms, indicators are measures of environmental conditions, while performance measures show how DNRP is doing at improving these conditions.

In practice, however, there is not always a clear line between measures that are environmental indicators and those that are measuring our agency's performance.

DNRP distinguishes between environmental indicators and performance measures based on the degree of our influence — measures that have many contributing factors are included as indicators, while measures that are strongly influenced by DNRP policies, programs, and practices are considered performance measures.



Indicators

DNRP KingStat environmental indicators are summarized in five groups:

- Aquatic Environment
- Land & Resources
- Health & Safety
- Resource Consumption
- Atmosphere

The pie chart at the top of each indicator page provides a high-level summary of that indicator's condition. Readers will find more detailed information on environmental conditions by reviewing the various component measures, while information on how the data is collected can be found at the bottom of the page in "Technical Notes."

Information about these environmental indicators use a simple red/yellow/green/gray designation, where:

- Green signifies meeting or exceeding an adopted standard, a stated goal, or improved from prior years;
- Yellow signifies approaching to within 10 percent of an adopted standard, stated goal or has remained steady with prior years;
- Red signifies being below the standard or goal, or declining from prior years; and
- Gray signifies insufficient data at this time.

WHAT CAN YOU DO?

At Home

Puget Sound Shoreline Stewardship Guidebook

Embrace Natural Yard Care

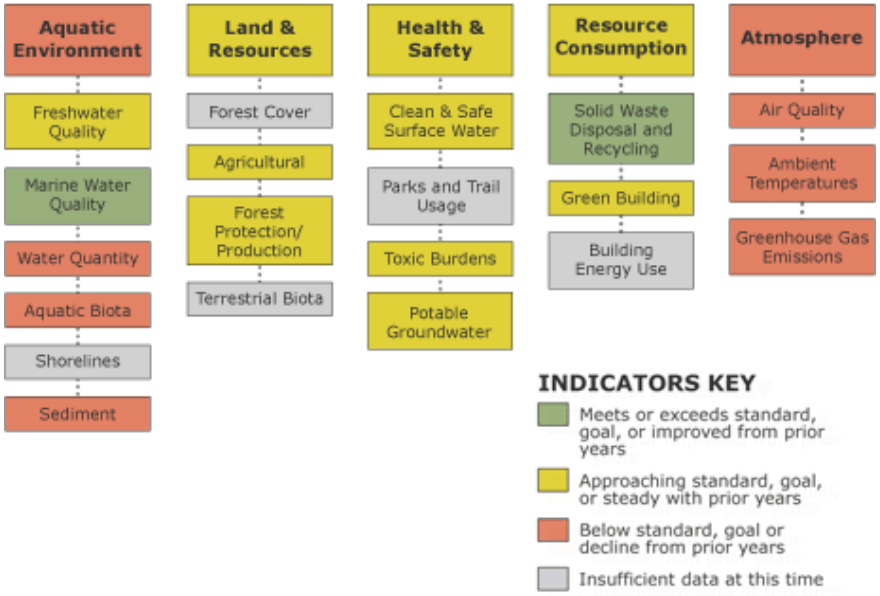
Related Information

DNRP Budget And Organization Chart

King County Ecological Lands

DNRP 2008 INDICATORS

INDICATORS OF ENVIRONMENTAL AND COMMUNITY CONDITIONS



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We welcome your feedback and suggestions to improve this site, such as:

- Other reliable environmental data sources for King County
- Adjustments to the weightings for indicators and performance measures
- Mistakes to fix

Share your thoughts by sending an e-mail to Richard Gelb, DNRP Performance Measurement Lead, at richard.gelb@kingcounty.gov so your input can be considered for subsequent updates.

Updated: August 18, 2009

INDICATORS - 2008 ARCHIVE

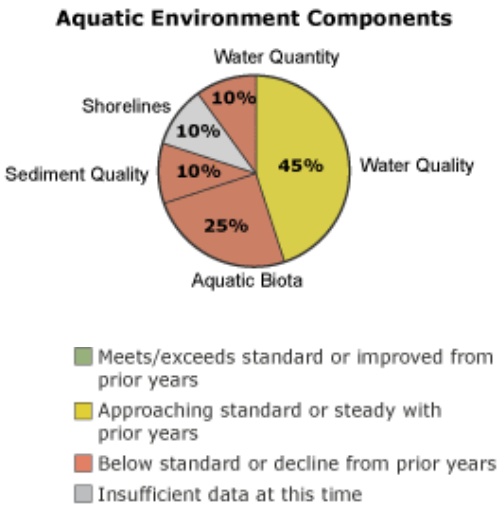
AQUATIC ENVIRONMENT

Indicator

King County's Aquatic Environment Index includes information about the conditions of water quality, aquatic biota, shorelines, water quantity, and sediment quality. Our weighting system for overall aquatic environment condition includes:

- 45 percent water quality
- 25 percent aquatic biota
- 10 percent water quantity
- 10 percent shorelines, and
- 10 percent sediment quality

2008 Rating



Status

Overall, conditions are below standard, with a few areas of lesser concern.

Influencing factors

Over the past two centuries, increased population and development have substantially altered King County's landscape. Less forests and natural land cover increase the need for engineered stormwater controls and reduce the amount of habitat for animal and plant species. Development and deteriorating water quality impact wildlife habitat — particularly the amounts of hard or paved surfaces, loss of tree cover and other changes to natural environments. Phosphorus from blended stormwater and wastewater that bypasses the treatment process during significant storm events, failing septic systems, pet wastes and water bird droppings reduce dissolved oxygen levels and increase water temperatures. Marine habitat quality is reduced by non-point source pollution, contaminated sediments and the high percentage of shoreline that has been armored with bulkheads and other structures.

What you can do

- Reduce your driving and reliance on cars -- drippings and exhaust from vehicles and run-off from roads and parking lots are primary contributors of water quality declines.
- Properly dispose of harmful chemicals, including unused pharmaceuticals and latex paints, instead of pouring them down the drain or allowing them to run off on the ground.
- Minimize the use of fertilizers and pesticides by practicing natural yard care.
- Wash your car on the grass or gravel instead of on the street or driveway, or take it to a car wash.
- Properly dispose of or manage pet and livestock wastes.
- Consider alternatives to bulkheads and other artificial barriers to marine shorelines.
- Plant trees and reduce impervious surfaces by using pervious pavers in drive and walkways.
- Encourage your local city or town to make tree protection regulations stronger.

WHAT CAN YOU DO?

At Home

Puget Sound Shoreline Stewardship Guidebook

Shoreline Practices for a Healthy Lake, River or Stream

Duwamish River Cleanup Coalition

At Work

Reduce your runoff, get a fee discount

Learn Best Practices to reduce Stormwater Pollution

Understand Industrial Waste Discharge Limits

Related Information

DNRP Budget And Organization Chart

Puget Sound Marine Topics

Puget Sound Watershed

Vashon Island Environmental Information

Puget Sound Partnership Recommendations

EPA: Lower Duwamish Watershed

Scientists Concerned For Puget Sound

A Comprehensive Assessment of the

- Contact your elected officials and express how important wildlife protections are to you—including salmon restoration.

More information about King County's Aquatic Environment Index is available by continuing to the following links for these measures:

More information about King County's Freshwater and Marine Water Quality is available by continuing below for these measures:

- Water Quality - Freshwater Environment
- Water Quality - Marine Environment
- Aquatic Biota
- Water Quantity
- Shorelines
- Sediment Quality

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Updated: August 18, 2009

FRESHWATER WATER QUALITY

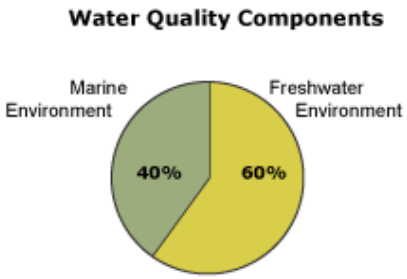
2008 Rating: ⇔

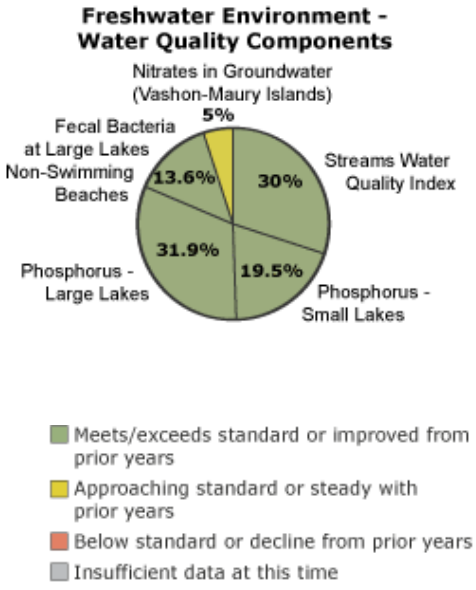
Freshwater Environment

About this indicator: King County's Freshwater Water Quality Index is derived from two main groupings of results describing the conditions of lakes and rivers & streams. Wetland conditions do not factor into the index at this time because of inadequate data. Our weighting system applies 65 percent to lakes, 30 percent to rivers and streams, and 5 percent to groundwater toward the overall freshwater water quality. Within the lakes index, our weighting system applies 70 percent to large lakes and 30 percent to small lakes toward the overall lakes indicator.

Status: Overall below standard, though with some areas of lesser concern.

Influencing factors: The impacts of development, landowner practices in areas close to the shoreline and pollutants are the dominant drivers determining the health of freshwater bodies in King County. Less forest cover and increases in impervious surfaces result in higher stream temperatures and more urban runoff. Phosphorus from blended stormwater and wastewater that bypasses the treatment process during significant storm events, failing septic systems, pet wastes and water bird droppings reduce dissolved oxygen levels and increase water temperatures.





What you can do:

- Properly dispose of unused pharmaceuticals, harmful chemicals and paints, instead of pouring them down the drain or allowing them to run off on the ground.
- Minimize the use of fertilizers and pesticides by practicing natural yard care.
- Wash your car on the grass or gravel instead of on the street or driveway, or take it to a car wash.
- Properly dispose of or manage pet and livestock wastes.

More information about King County's Freshwater Lakes and Streams is available by continuing below for these measures:

- Phosphorus in Large Lakes
- Fecal Bacteria at Large Lakes Non-Swimming Beaches (ambient)

WHAT CAN YOU DO?

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Puget Sound Watershed

Vashon Island Environmental Information

King County marine research vessel "Liberty"

Hood Canal Marine Life Struggling for Oxygen

Lower Duwamish Watershed

Marine Benthic Invertebrate Communities Near King County Wastewater Outfalls

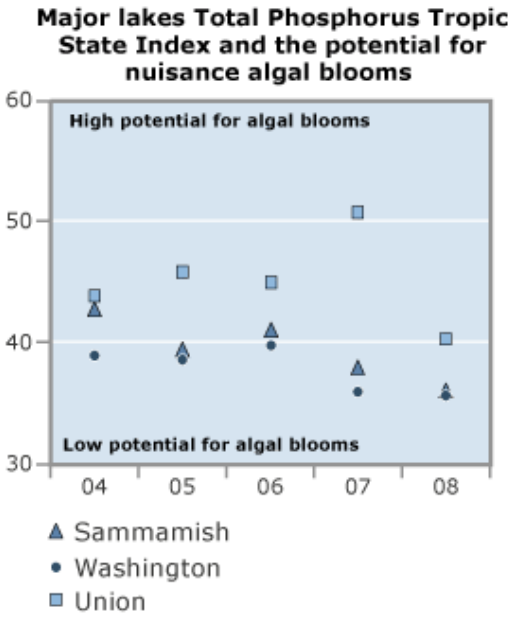
Water and Land Resources Division

- Phosphorus in Small Lakes
- Streams Water Quality Index
- Nitrates in Groundwater on Vashon-Maury Islands

Marine Water Technical Reports

Phosphorus in Large Lakes

About this measure: The people of King County have made significant investments in water quality improvement and protection to lakes Washington, Sammamish and Union beginning with the diversion of wastewater effluent out of Lake Washington and Lake Sammamish in 1968.



Water quality improvements continue with efforts to:

- Reduce the discharge of combined sewer overflows
- Improve King County's wastewater treatment system (including construction of Brightwater treatment facility)
- Expand effluent reuse programs

These gains in water quality are constantly threatened by increasing amounts of phosphorus entering the watersheds as a result of increased development.

Status: Lake water quality results vary annually, depending on the climate and biological interactions that combine to create unique annual conditions in each lake. For example, the 1994-2008 results for Lakes Sammamish and Washington show phosphorus concentrations fluctuated between low to moderate threshold from year to year, indicating water quality varies from good to moderate with low potential for nuisance algal blooms. Lake Union typically has phosphorus concentrations within the moderate water quality range, with the exception of 2007. In 2007 high phosphorus levels put Lake Union in the poor water quality range.

Lake Sammamish is the only one of the three lakes with a management plan and designated water quality goals. The plan calls for an annual volume weighted total phosphorus concentration (VWTP) of 22 µg/L or less. Both the north and south lake stations met this goal in 2008 with a VWTP of 17 µg/L and 15 µg/L, respectively.

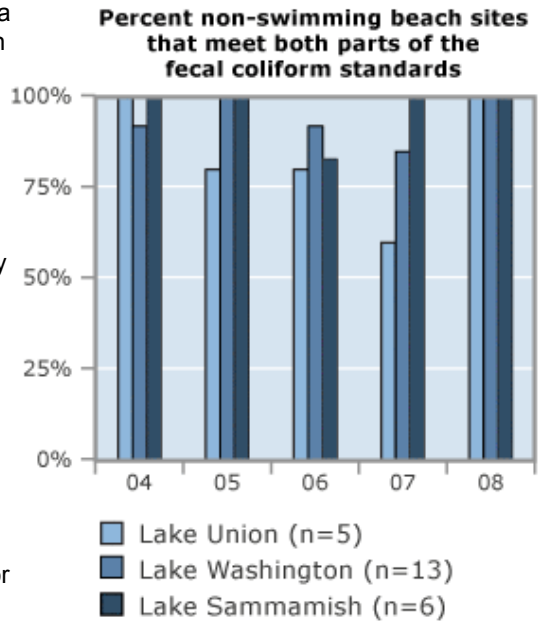
Influencing factors: In this region, phosphorus is most often the nutrient that promotes algal growth in freshwater. The more phosphorus that can be stopped from entering lakes, the less chance that a potentially toxic cyanobacteria bloom will occur. Phosphorus can be managed through well-designed drainage systems, maintenance of sewer infrastructure, changing homeowner and business behaviors (to use no phosphorus fertilizers on lawns), education and incentives, and replacing watershed septic systems with sewers.

Existing DNRP response: King County will continue to monitor these lakes as part of its ongoing, Major Lakes Ambient Monitoring Program. This program is designed to track how lakes respond over time to various activities and inputs from the watersheds through influent streams, lake nutrient cycles, ecological interactions, and seasonal or year-to-year variability in weather. The goal of 100 percent of the three major lakes being within the range of moderate to low risk of potential algal blooms was met in 2008. If the lakes begin to show serious deterioration in terms of their beneficial uses, actions will be taken to further investigate causes and plans will be made.

Priority new actions: Continual changes to data analysis and Web site reporting will provide current and accessible information for the management of these resources.

Fecal Bacteria at Large Lakes Non-Swimming Beaches (ambient)

About this indicator: The presence of fecal bacteria in waterbodies indicates potential contamination with the fecal material from humans, birds or other animals. Fecal coliform bacteria is not a perfect indicator of sewage pollution because it can come from household or farm animals, wildlife, as well as untreated wastewater effluent and failing septic systems.



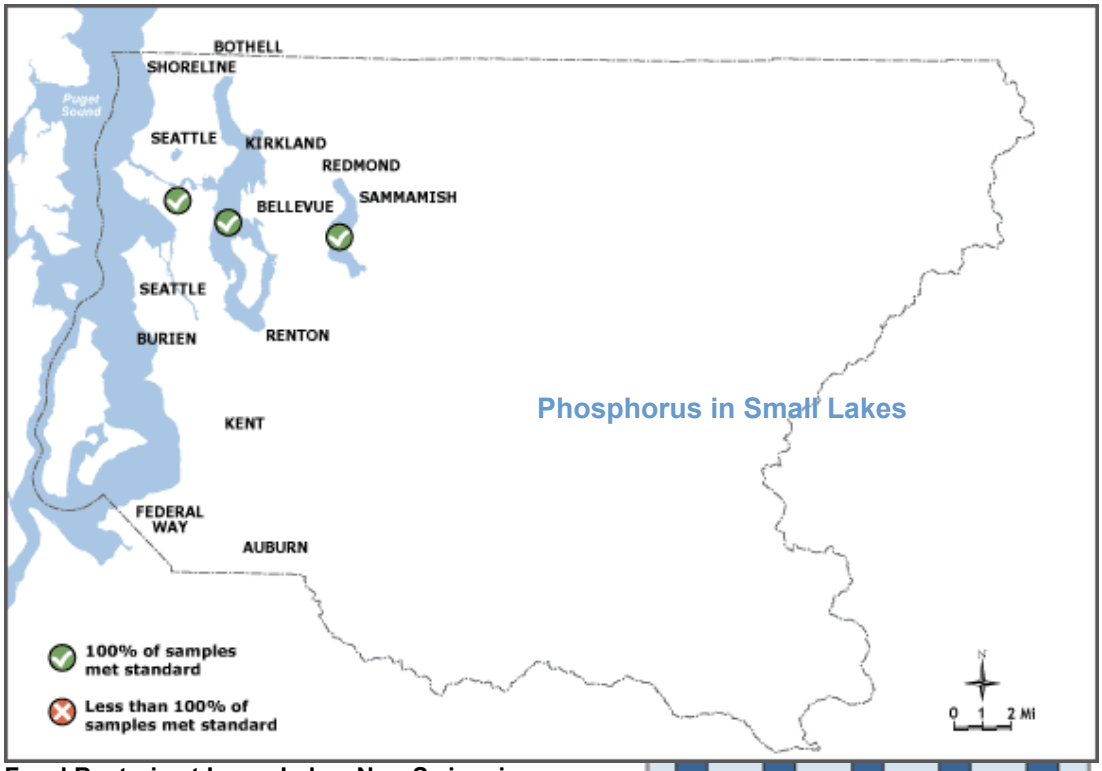
Although these bacteria are usually not harmful, they often co-occur with disease-causing pathogens, so their presence at high levels indicates an increased probability that people are at risk of becoming sick if they come into contact with the water. The lake standard for fecal coliform bacteria addresses human safety due to direct contact with the water from activities such as swimming and wading. Sites used for this indicator are located in both mid-lake (open water) and nearshore locations in King County's three largest lakes — Washington, Sammamish and Union. This environmental indicator is based on data collected at the routine monitoring sites and does not include sampling done in conjunction with emergency sewer overflow events or as part of the Swimming Beach Monitoring Program.

Status: Even though this measure uses a standard that is exceptionally difficult to attain, 100 percent of all stations in lakes Union, Washington, and Sammamish achieved the lake standard for fecal coliform bacteria in 2008.

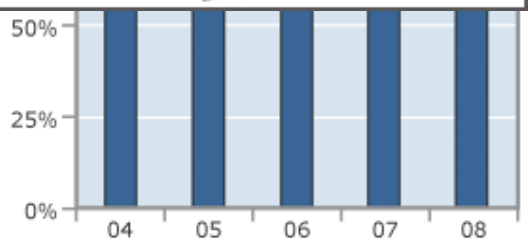
Influencing factors: Sampling in 2008 did not follow any unusual storm conditions. In general, high bacteria concentrations have been measured in Lake Washington and Lake Union directly after a major rainfall event due to the influence of combined sewer overflow and stormwater outfalls (CSO's). There are five CSO's that discharge into Lake Washington and seven that discharge into the much smaller Lake Union. Additionally, the City of Seattle has 38 CSO's that discharge along the west side of Lake Washington and into Lake Union and the Ship Canal. There are no CSO's that discharge into Lake Sammamish.

Existing DNRP response: DNRP will be reducing lake monitoring efforts in 2009 due to budget cuts. Fecal coliform monitoring will continue at three stations in Lake Union to detect existing and potential problems with the stormwater and wastewater treatment system. In addition, King County's Combined Sewer Overflow (CSO) program is employing various ways to control CSO's including controlling pollution at its sources, optimizing flow management, monitoring and modeling flows in the system and constructing CSO control facilities. To protect public health, King County has scheduled to control CSO's, beginning with construction of CSO control projects along Puget Sound beaches (2010-2011) and the east end of the Lake Washington Ship Canal (2015). The final phase of projects will be built along the Duwamish River (2017-2027) and the west end of the Ship Canal (2029-2030).

Priority new actions: King County expects to build about 20 Combined Sewage Overflow control projects during the next 30 years.



Fecal Bacteria at Large Lakes Non-Swimming Beaches (ambient)
2008 Findings
Click to download the PDF version.



About this indicator: DNRP's goal is to maintain all beneficial uses of county lakes. In this region, high concentrations of the nutrient phosphorus are often correlated with increased algal growth. Thus, if the amount of phosphorus entering lakes is controlled or reduced, algal blooms are likely to decrease. Algal blooms are a nuisance because they can cause scum to form on the lake's surface and occasionally give a foul odor and taste to the water. When a bloom dies off it can also deplete the oxygen levels available to other aquatic life. In rare circumstances, algal blooms can become toxic.

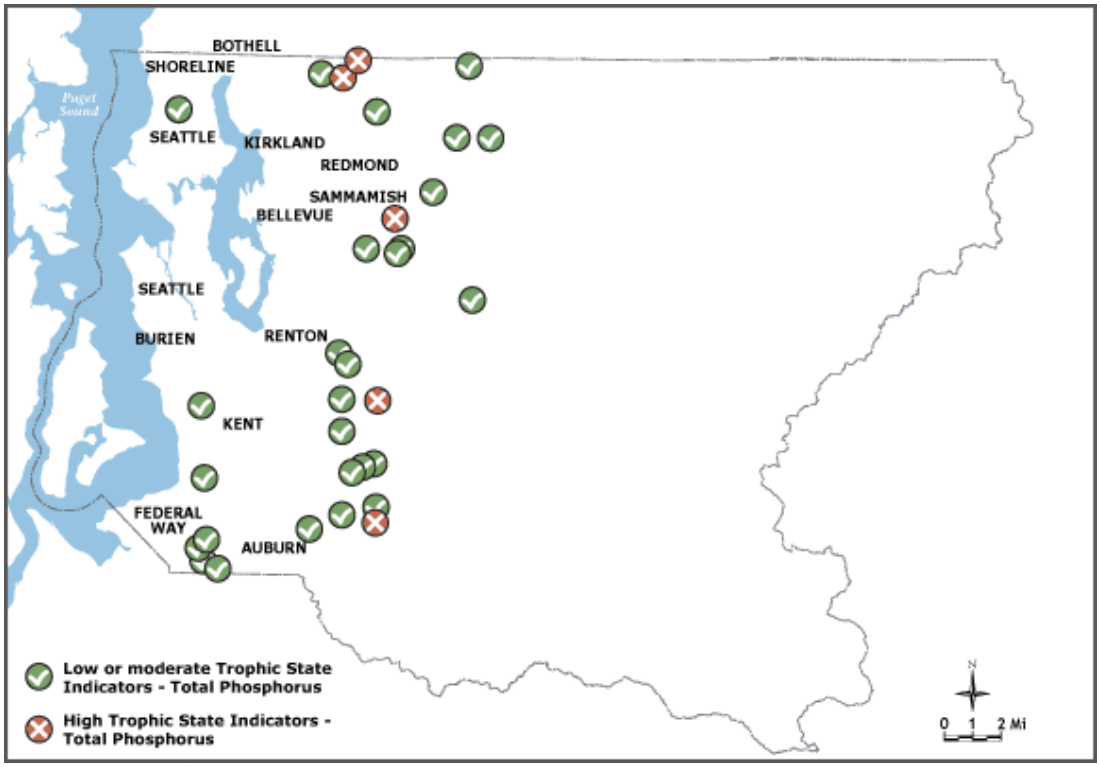
Phosphorus concentrations in lake water as an indicator assess the potential for nuisance or toxic algal blooms that impact lakes, facilitating allocation of limited county resources toward restoring lakes with indications of serious degradation. This indicator uses summer phosphorus concentrations converted to Trophic State Indicators (TSI-TP) to assess conditions. Trophic State Indicators relate phosphorus to the amount of algae that the lake can support. Values below 50 have low or moderate potential for nuisance algae blooms; values above 50 have a higher potential.

Status: This indicator incorporates data from 31 of the lakes monitored by King County. About 84 percent of the lakes have good water quality with low potential for nuisance algal blooms.

Influencing factors: Lake water quality varies annually and is affected by many site-specific factors. Phosphorus can be managed through drainage system design, improved sewer service, and encouraging homeowners through education and incentives to use best management practices. Although large amounts of algae may relate to changes in conditions, this increased presence may not always reduce beneficial uses. However, a trend in a particular lake toward increased TSI-TP over time is probably due to changes in the watershed and cannot be discounted.

Existing DNRP response: Due to budget cuts, we have stopped monitoring small lakes in unincorporated King County. We will continue to monitor small lakes in incorporated cities in King County where we have interagency agreements to pay for the monitoring. The available monitoring data is available online.

Priority new actions: Lake management plans will be considered if any other county lakes begin to show serious deterioration in terms of beneficial uses.



Phosphorus in Small Lakes
2008 Findings
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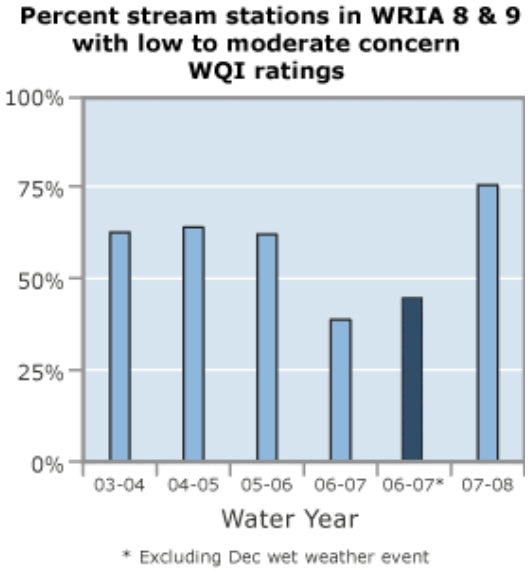
Streams Water Quality Index



About this indicator: King County's Water Quality Index integrates key factors into a single number that can be compared over time and across locations. This index is based on the Oregon Water Quality Index and work done by the Washington Department of Ecology. From 2000 through 2008, 56 sites in the Lake Washington and Green-Duwamish drainage basins were sampled monthly for temperature, pH, fecal coliform bacteria, dissolved oxygen, turbidity, total suspended solids, and nutrients (phosphorus and nitrogen) relative to state standards and guidelines. In 2006 seven Vashon Island streams were added to this index.

Status: Of the total 63 stream sites sampled in 2008, 76 percent were considered low to moderate water quality concern, and 24 percent were rated to be of high concern. All sites rated of high concern were impacted in part by excessive nitrogen and/or phosphorus. In addition almost all high concern sites were affected by low dissolved oxygen (73 percent), high fecal coliform bacteria (67 percent), high temperatures (33 percent), and high-suspended solids/turbidity (13 percent).

Influencing factors: Overall stream water quality in King County is impacted by increased development in our region — primarily stormwater runoff. In 2007-08, cumulative rainfall was below average compared to historical values, even with an exceptionally wet December. This is reflected in the better WQI scores for the year.

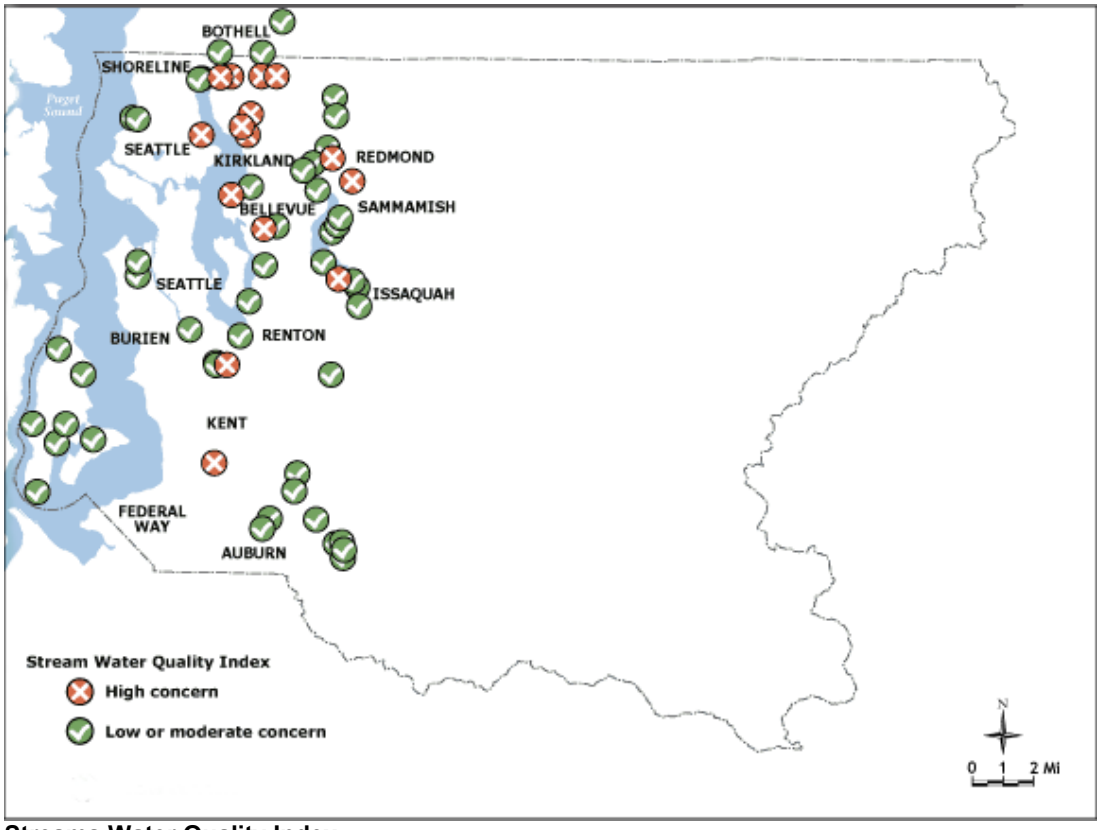
Stormwater, combined sewer overflows (CSO's), waterfowl and pet wastes are the most likely sources of bacteria in urban streams. Poor livestock manure management and failing septic systems can be a potential source of bacteria in agricultural and suburban areas. In wetlands, wildlife excrement and stagnant water conditions can lead to elevated bacteria counts. High phosphorus concentrations are found in fecal material and elevated concentrations are often linked to similar sources as bacteria. In addition, elevated phosphorus concentrations are linked to areas undergoing development.

Low dissolved oxygen concentrations can be associated with low flows, wetlands, high temperatures

(colder water holds more oxygen), and high levels of organic matter (bacteria use up oxygen in the process of decomposing).

Existing DNRP response: King County is responsible for preserving water quality and preventing and repairing damage to its waterways and water bodies. Attention is given to high concern sites to improve water quality. This can involve properly maintaining facilities, constructing or engineering solutions, identifying where or how pollutants are entering the stream, and/or educating adjacent property owners about the impacts of pesticides and fertilizers on streams.

Priority new actions: Results from King County's Water Quality Index highlight the need for a comprehensive and coordinated approach to resolving in-stream flow management, since lower summer flows and increased stormwater runoff inflate every water quality measurement of the index. In 2008 King County worked with the City of Kirkland and Washington State Department of Ecology on a Juanita Creek bacteria survey. Additional focused assessments will be developed in 2009. King County will work with the Puget Sound Partnership to advocate a coordinated effort in the planning at a regional scale.



Streams Water Quality Index
2008 Findings
Click to download the PDF version.

Nitrates in Groundwater on Vashon-Maury Islands

About this indicator: King County has been tracking groundwater quality on Vashon-Maury Island since 2001. Nitrate is used to track groundwater quality because it is a good indicator of changes caused by human activities, such as land-use development. King County's goal is to ensure high water quality through effective land-use and on-site septic regulations.

The groundwater quality indicator uses a nitrate index, defined as the maximum concentration of the annual sampling results divided by the maximum contaminant level (MCL) of Nitrate (10 mg/L). This method yields one number. The closer this index gets to 1 (or over 1) the greater concern. The nitrate index has been less than 0.5 since

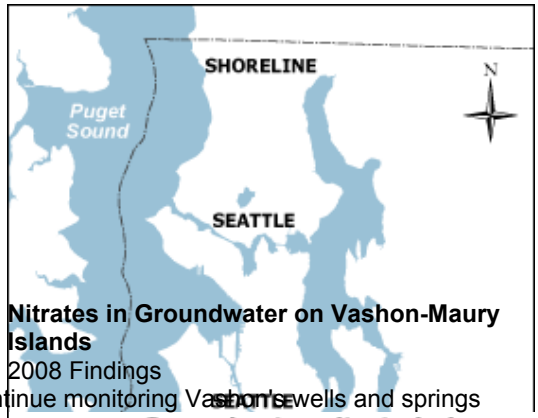
2003.

Status: Of the 19 well/spring sites monitored, all have tested below the drinking water standard (Maximum Contaminant Level, MCL of 10 mg/L) and all have less than 5 mg per liter of nitrate present. Less than half the sites tested have seen above average nitrate increases since testing began.

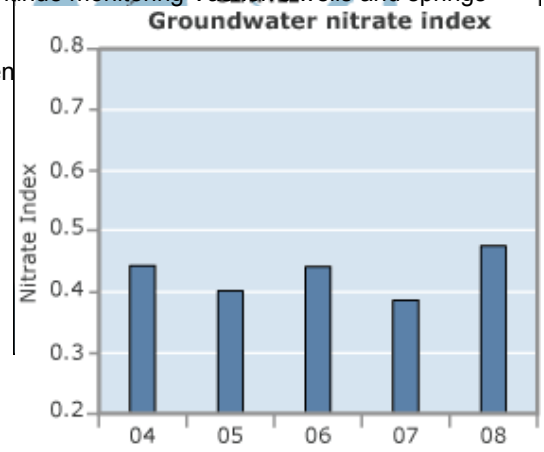
Influencing factors: Poor drainage systems, improperly maintained septic systems and improper fertilizer use can increase nitrate levels.

Existing DNRP response: King County plans to continue monitoring Vashon's wells and springs annually for nitrate concentrations.

Priority new actions: Additional locations have been sought to increase our understanding of island aquifers. King County intends to produce Vashon-Maury Island-wide water table, contour maps with seasonal variability that will be reported every year.



Nitrates in Groundwater on Vashon-Maury Islands
2008 Findings



Technical Notes

For definitions and more detail.

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Updated: August 18, 2009

MARINE WATER QUALITY

2008 Rating: ↑

Marine Environment

About this indicator: King County's Marine Water Quality includes information about the conditions of marine waters. Our weighting system for the marine environment water quality applies 75 percent to eutrophication and 25 percent to fecal bacteria.

Status: While, in general, the quality of open waters in Puget Sound is good, marine water quality conditions in certain areas of King County show evidence of degradation. Waters that are in protected areas without much current are of concern.

Influencing factors: Stormwater carrying nutrients from septic systems, chemicals from motor vehicles and phosphorus from fertilizers degrade marine water quality and reduce oxygen levels for the animals that live and depend on Puget Sound habitats.

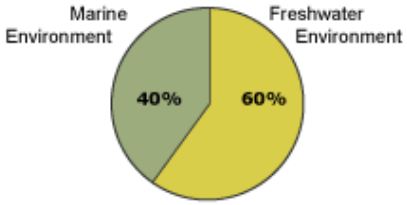
What you can do:

- Properly dispose of harmful chemicals, including unused pharmaceuticals and latex paints.
- Maintain, repair, or replace failing private septic systems.
- Minimize the use of fertilizers and pesticides by practicing natural yard care.
- Wash your car on the grass or gravel instead of on the street or driveway, or take it to a car wash.

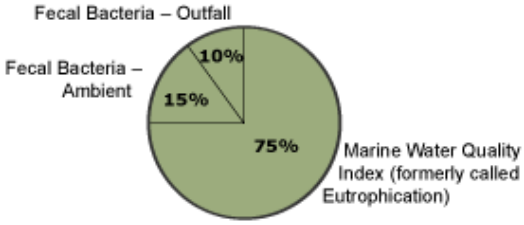
More information about King County's Freshwater Lakes and Streams is available by continuing below for these measures:

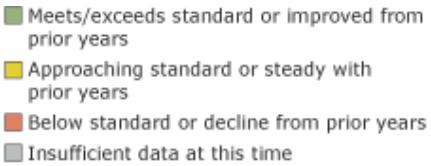
- Marine Water Quality Index (formerly called Eutrophication)
- Fecal Bacteria in Offshore Marine Waters (ambient and outfall)

Water Quality Components



Marine Environment - Water Quality Components





Marine Water Quality Index (formerly called Eutrophication)

About this indicator: King County conducts monthly water quality monitoring at 14 offshore locations in Puget Sound. Offshore marine waters

WHAT CAN YOU DO?

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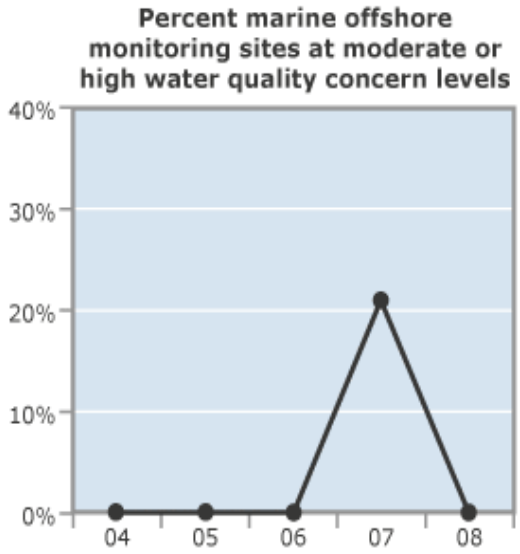
Puget Sound Shoreline Stewardship Guidebook
Shoreline Practices for a Healthy Lake, River or Stream

At Work
Reduce your runoff, get a fee discount
Learn Best Practices to reduce Stormwater Pollution
Understand Industrial Waste Discharge Limits

Related Information
Puget Sound Marine Topics
Puget Sound Watershed
Vashon Island Environmental Information
King County marine research vessel "Liberty"
Hood Canal Marine Life Struggling for Oxygen
Lower Duwamish Watershed
Marine Benthic Invertebrate Communities Near King County Wastewater Outfalls
Water and Land Resources Division

in King County are monitored for temperature, salinity, density, dissolved oxygen, nutrients, and chlorophyll. These variables can be used to assess eutrophication, (the process by which dissolved oxygen concentrations are depressed due to algae growth primarily caused by nutrients), sewage waste (ammonia), food availability to secondary producers (chlorophyll), and marine water habitat quality (temperature, salinity).



Status: 2008 findings indicate that the water quality at all 14 stations sampled is at a level of Low Concern. Three stations (two of which are located in Quartermaster Harbor) that were at either a Moderate or High Concern in 2007 were at a Low Concern for 2008.

The percentage of stations of Moderate or High Concern is 0%, which is a drop from 2007 (21%), but the same as 2004-2006.

Influencing factors: Vertical water density patterns can be indicators of an area's potential sensitivity to developing low dissolved oxygen conditions. Low oxygen conditions are harmful to fish and other aquatic life and may occur as a result of the natural flow of low oxygenated Pacific Ocean water into the deep main basin of Puget Sound, in addition to processes such as eutrophication. Persistently low nitrate concentrations in surface water can indicate a potential sensitivity to nutrient-rich input such as stormwater runoff, industrial waste discharges, septic systems, and flow from rivers. Ammonia can be found at elevated concentrations as a byproduct of sewage, agricultural practices, and fertilizer use in urban areas.

Marine Eutrophication
2008 Findings

Existing DNRP response: DNRP will continue to operate its wastewater treatment plants and conveyance system effectively to maintain low levels of nutrients discharged into marine waters. The new Brightwater Treatment System will use state of the art technology to reduce nutrients and other pollutants. Nutrient levels are also addressed by the agency through stormwater control management practices. Additionally, DNRP will continue to play an active role in the recently formed Puget Sound Partnership toward improving water quality throughout the entire Puget Sound.

Priority new actions: Stratification intensity and its persistence is beyond King County's influence, but should be monitored as it is an important indicator of areas sensitive to possible water quality problems.

Fecal Bacteria in Offshore Marine Waters (ambient and outfall)

About this indicator: The presence of fecal bacteria in water bodies indicates contamination with the fecal material of humans, birds, or other warm-blooded animals. Although these bacteria are usually not harmful themselves, they often occur in conjunction with other disease-causing pathogens, and their presence at high levels indicates an increased possibility that people might get sick if they come into contact with the water.

Washington State has a marine surface water quality bacteria standard based upon fecal coliforms. This standard was derived for the protection of human health and address water quality requirements for both primary contact recreational uses (e.g. swimming and SCUBA diving) as well as the consumption of shellfish. This fecal coliform standard is a geometric mean of 14 colony forming units /100ml, calculated over a 12-month sampling period.

King County conducted monthly water quality monitoring in 2008 at 15 offshore locations in Puget

Sound. Offshore monitoring locations are divided into two categories, ambient and outfall stations. Ambient stations are chosen to reflect general, or ambient, environmental conditions, while outfall stations are located at King County wastewater treatment plant outfalls and county-operated combined sewer overflow outfalls. Monitoring occurred at seven outfall stations and eight ambient stations in 2008. Ambient stations were located in the Central Basin of Puget Sound as well as Elliott Bay, Quartermaster Harbor, Salmon Bay, and Fauntleroy Cove.

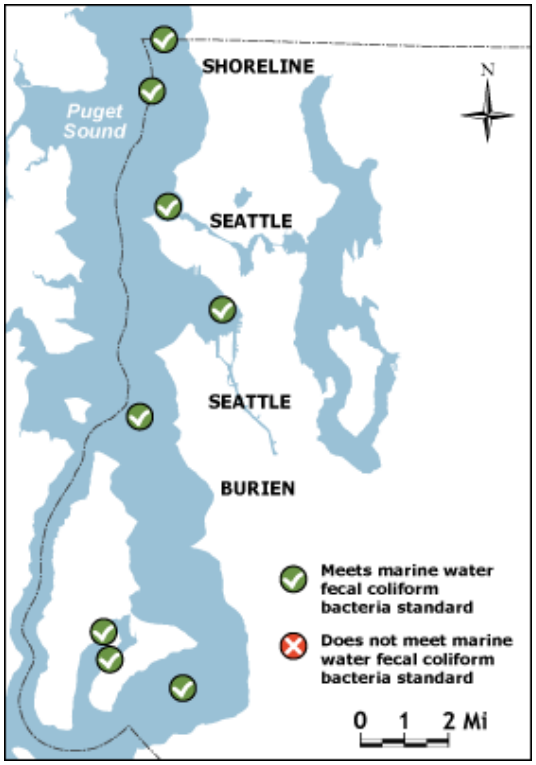
The status of this indicator is based upon the geometric mean of the fecal coliform bacteria counts over the 12-month period of calendar year 2008 in samples collected from 15 monitoring stations at a depth of one meter below the surface.

Status: All ambient and outfall stations met the fecal coliform bacteria geometric mean standard in 2008. Fecal coliform bacteria counts do not appear to be an ongoing concern in offshore surface marine waters within King County.

Influencing factors: Fecal coliform bacteria can enter Puget Sound from domestic animals, wildlife, storm water runoff, wastewater discharges, and failing septic systems. Non-point source pollution (e.g. storm water runoff and agriculture) is the major cause of marine water bacterial contamination.

Existing DNRP response: DNRP will continue to manage its wastewater treatment plants and conveyance system effectively. The county is working with the Puget Sound Partnership effort toward protecting and restoring the health of marine waters.

Priority new actions: No major changes to the offshore marine water quality monitoring program are planned for 2009.



Fecal bacteria at ambient monitoring sites
2008 Findings
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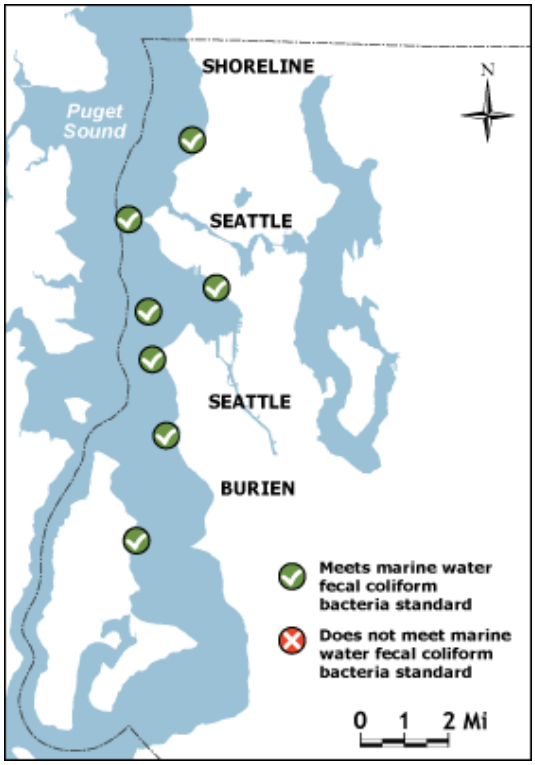

Fecal bacteria at wastewater outfall sites
2008 findings
Click to download the PDF version.

Technical Notes

For definitions and more detail.

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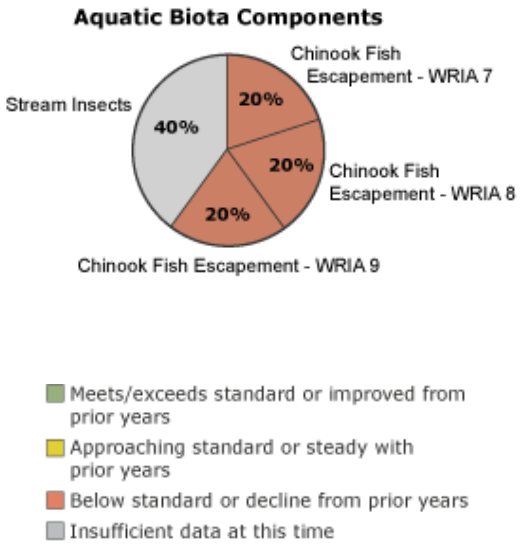
Updated: August 18, 2009

AQUATIC BIOTA

2008 Rating: ↓

About this indicator: King County's Aquatic Biota Index is derived from two main groupings of results regarding numbers of fish and stream insects. This weighting system applies 60 percent of fish results and 40 percent of the stream insects, or benthic indicators of biodiversity index results. Chinook salmon are the only fish reflected in this category. Other fish species should be included in the assessment of aquatic biota health, but there is no consistently collected data regarding these animals in King County.



Status: Information gathered over the last 100 years indicates an overall decline in the health of native, naturally spawning salmon populations in Puget Sound watersheds.

Influencing factors: Development and deteriorating water quality impact wildlife habitat — particularly the amounts of hard or paved surfaces, loss of tree cover and other changes to natural environments.

What you can do:

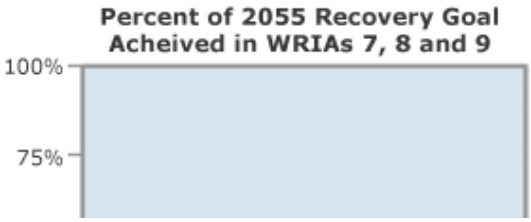
- Plant trees and reduce impervious surfaces by using pervious pavers in drive and walkways.
- Encourage your local city or town to make tree protection regulations stronger.
- Contact your elected officials and express how important wildlife protections are to you—including salmon restoration.

More information about King County's Fish and Stream Insects is available by continuing below for these measures:

- Chinook Salmon
- Stream Insect Health

Chinook Salmon

About this indicator: Salmonid fishes native to King County include chinook, coho, sockeye/kokanee, pink and chum salmon, rainbow (including the anadromous form called "steelhead"), cutthroat, bull and dolly varden trout and pygmy and mountain whitefish. Each of these species has a diverse life history and relies upon a range of habitats for spawning, rearing, feeding and migration. They also have major cultural, economic and political roles in the Pacific



WHAT CAN YOU DO?

At Home

Embrace Natural Yard Care

Home & garden hints for healthy streams & salmon

At Work

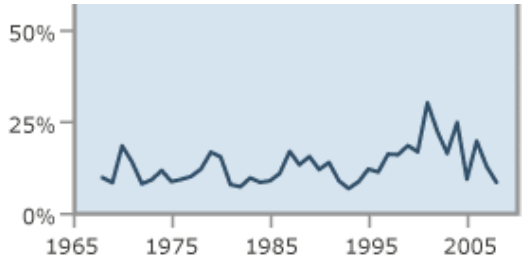
Apply Integrated Pest Management in your landscaping

Related Information

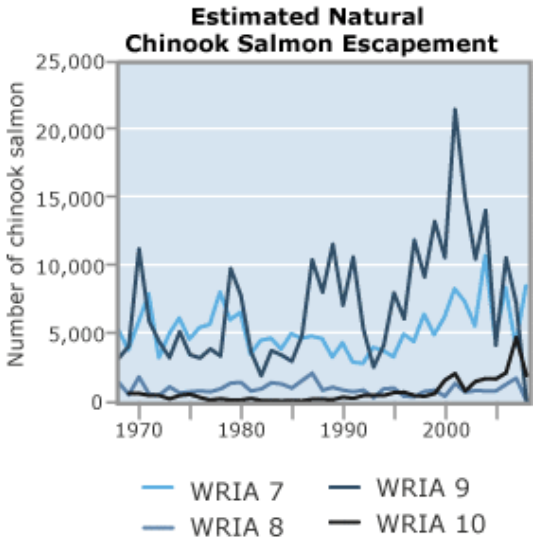
Stream Bug monitoring

Shoreline Ecological Characterization

Northwest. Of these, Chinook, Bull trout, and Steelhead have been listed for protection under the Endangered Species Act. Throughout much of Washington State, the harvest and hatchery propagation of these fish populations and to a lesser extent, their habitat, are co-managed by the State of Washington, through the Washington State Department of Fish and Wildlife (WA DFW), and the treaty Indian tribes.



King County includes all or portions of four major watersheds, which are denitified by Watershed Resource Inventory Areas (WRIA): the Snohomish (WRIA 7), Cedar/Lake Washington (WRIA 8), Green/Duwamish (WRIA 9) and Puyallup/White (WRIA 10). Although King County does not manage fish populations directly, it does have jurisdictional responsibility for many activities, including land-use regulation, which greatly influences the quantity, quality and distribution of salmon habitats.



Natural chinook salmon spawning ground escapement is the number of mature, adult chinook salmon that escape fisheries and return to their stream of origin to spawn naturally. It is an indicator of the abundance of chinook salmon and can be used, along with other population indicators, to evaluate the overall health of marine and freshwater ecosystems.

Chinook salmon long-term recovery goals (recovery goals) were established to be reflective of characteristics of a viable salmon population[1]: abundance, geographic distribution, genetic and phenotypic diversity and productivity. These recovery goals were established for watersheds through the cooperative Puget Sound Shared Strategy process. The recovery goals to be targeted are 64,000 for WRIA 7, 12,200 for WRIA 8 and 27,000 for WRIA 9. There are no recovery goals for WRIA 10.

This indicator is based on the percent of natural chinook salmon escapement with respect to an adjusted annual recovery goal for each WRIA, where applicable. Our weighting system for this indicator is applied equally to WRIA 7, 8 and 9

Status: With the exception of an increase of more than double the 2007 level in WRIA 7, the 2008 fish count was down from 2007 in WRIAs 8, 9 and 10. The count for WRIA 8 in 2008 was almost half of that in 2007. The decrease on the White River (WRIA 10) was more than double the 2007 count. However, the WRIA 10 fish count has shown a steady increase since about 2000. Natural variations are expected due to a wide variety of influencing factors. Overall, the natural chinook salmon escapement results for each WRIA were far below the respective adjusted annual recovery goal and comprised of only 8 percent of the recovery target.

Influencing factors: Natural Chinook salmon escapement is related to the habitat and water quality of the County's rivers and streams, along with several other factors such as precipitation, hatcheries, biology, harvest, and flow management. Some annual variation in salmon returns is to be expected and is unrelated to local human influences. For example, natural cycles of ocean warming and cooling and longer term trends in climate can also greatly affect local salmonid productivity.

Existing DNRP response: Inter-jurisdictional, watershed-based salmon conservation plans have been completed for WRIA's 7, 8, 9 and 10. The plans were submitted to federal agencies for review in 2005, and accepted by the National Marine Fisheries Service in February 2006 with a few additions. The plans include actions for meeting long-term recovery goals. King County serves as the lead agency for two WRIA's and participates in the efforts and activities of all four. The county will continue its participation in the WRIA process and the larger, region wide Shared Strategy For Puget Sound process to secure funding for and implement the measures identified in these plans toward habitat improvement projects that should help to recover the species.

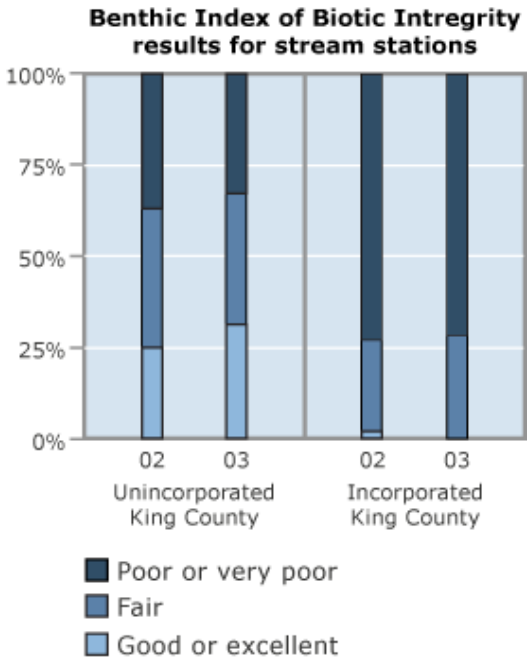
Priority new actions: King County is in the implementation phase for the WRIA 7, 8 and 9 Salmon Conservation and Habitat Plans.

[1] A viable salmon population is defined as one with a negligible risk of extinction in 100 years. Negligible has been taken to mean less than 5%.

Stream Insect Health

About this indicator: King County monitors stream health by collecting samples of benthic macroinvertebrates, commonly referred to as "bugs," from selected streams.

Scientists use a scorecard system called the Benthic Index of Biotic Integrity (B-IBI) to rank the health of streams. The scores are based on the types of stream bugs living in the stream and the number of different kinds of stream bugs present. By using this scoring system, we can compare very different streams to each other and rank their ecological health.



Status: The 2003 data are the most recent available. A total of 128 stations in 55 streams within 15 sub-basins across the Lake Washington/Cedar/Sammamish watershed (WRIA 8) and the Green/Duwamish watershed (WRIA 9) were sampled. Results for unincorporated and incorporated areas within King County are dramatically different. In 2003, 31 percent of the sampled streams in unincorporated areas had benthic insect communities in good or excellent condition, whereas none of the stream stations in incorporated areas rated this high.

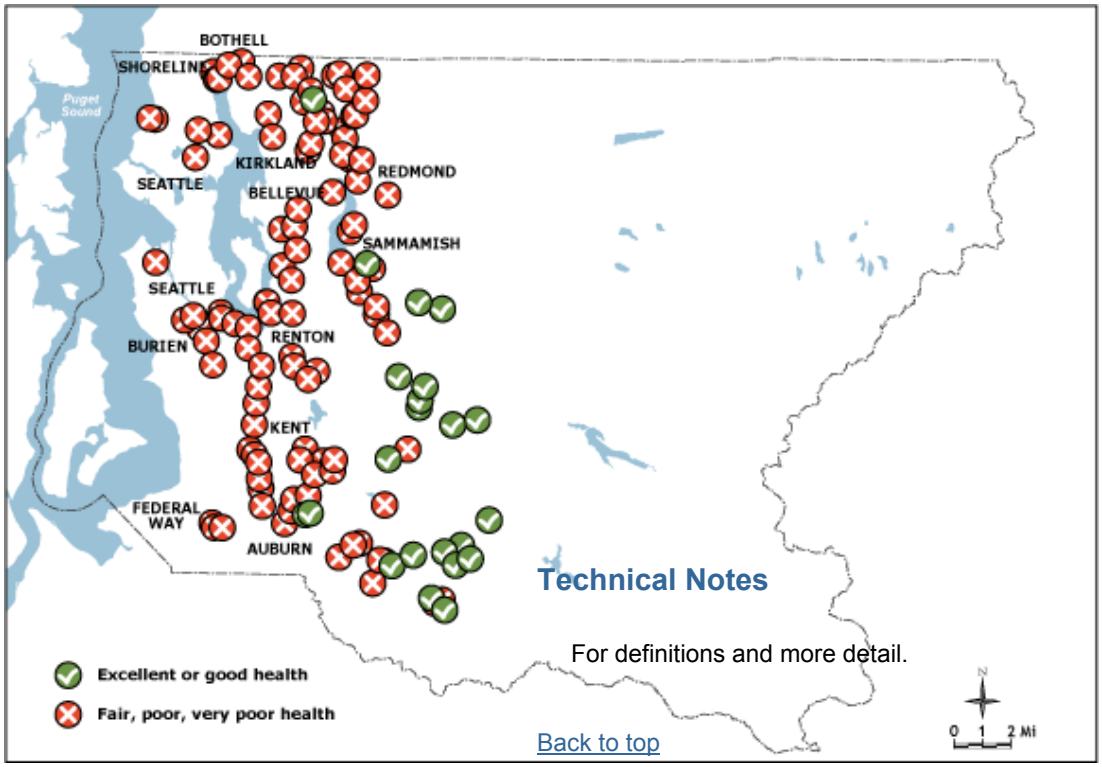
Influencing factors: Development, pollutant runoff, loss of forest cover, stream and wetland ecological health, elevated stream temperatures, fish migration barriers, and of invasive and non-native plants are a few factors that can have an affect on the stream insect populations. Insufficient flows in streams can reduce number of sampling sites, affecting annual comparisons.

Existing DNRP response: WLR continues to implement programs focusing on minimizing degradation from development and pollutant runoff from farms, preventing the loss of forest cover and its numerous stormwater benefits, or implementing watershed improvement projects. King County's Stormwater Program focuses on flow control to minimize adverse effects from development, provides surface water design standards for new development and inspects and maintains stormwater control facilities.

The county continues to work with landowners to restore streamside parcels that have important benefits as aquatic resources. In addition, WLR's capital projects program builds small and large stream and wetland enhancement projects. Basin stewards work with the local community to respond to resident's inquiries for watershed protection, coordinate efforts among diverse public agencies, facilitate watershed project implementation, provide assistance to monitoring programs and provide public education opportunities. The Agriculture Program works with farmers and livestock owners to prevent agricultural pollutants from running off into streams.

Priority new actions: Implementation of the county's Critical Areas Ordinance and federal total maximum daily load (TMDL) requirements for impaired water bodies are regulations that will also support water quality improvements in both incorporated and unincorporated areas.

The taxonomic analysis of the 2005, 2006, and 2008 B-IBI samples will be complete in late 2009.



Stream Insect Health
2003 Findings
Click to download the PDF version.

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- Other reliable environmental data sources for King County
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- Mistakes to fix

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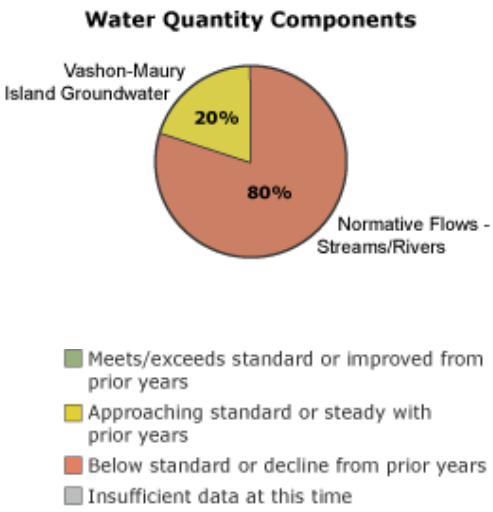
Updated: August 18, 2009

INDICATORS - 2008 ARCHIVE

WATER QUANTITY

2008 Rating: ↓

About this indicator: King County's Water Quantity Index is derived from two main groupings of freshwater results describing the conditions of rivers and streams and groundwater. Lakes and wetlands do not factor into the index at this time. Our weighting system applies 80 percent to rivers and streams and 20 percent to groundwater condition results toward the overall water quantity rating. The weighting of groundwater quantity would be larger if data for groundwater well water levels for other areas besides Vashon-Maury Islands was collected on a regular basis. Although, there is no indicator for the marine environment, an indicator may be added next year with respect to sea level.



Status: Overall below standard with some areas of lesser concerns.

Influencing factors: Extensive development can substantially alter stream flow patterns and how they respond to rainfall. Changes in land use and/or vegetation, increases in groundwater withdrawals and climatic changes can adversely affect the quantity of groundwater.

What you can do: Practice conservation with respect to groundwater usage, low-water use gardening, adhere to regulations related to groundwater pumping, and support efforts to practice habitat restoration and best management practices to mitigate runoff resulting in flash flooding and channel erosion.

More information about King County's Water Quantity Index is available by continuing below for these measures:

- Normative Flows on Streams & Rivers
- Groundwater Water Levels on Vashon-Maury Islands

Normative Flows on Streams & Rivers

WHAT CAN YOU DO?

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King County marine research vessel "Liberty"

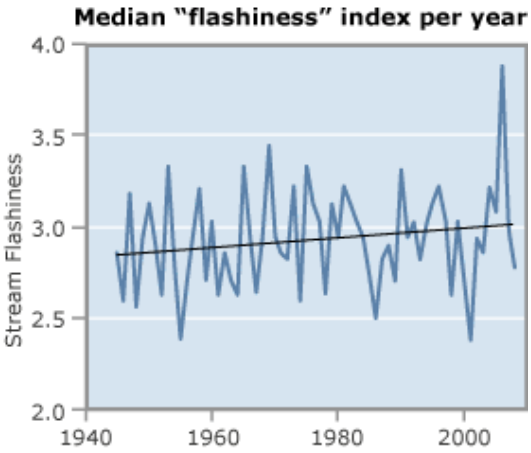
Hood Canal Marine Life Struggling for Oxygen

Lower Duwamish Watershed

Marine Benthic Invertebrate Communities Near King County Wastewater Outfalls

Water and Land Resources Division

About this indicator: This indicator uses a stream "flashiness" index — based on the reciprocal of the fraction of days during the year that the flow rises above the annual mean daily flow. Because peak stream flow rises and falls more quickly in urban areas than forested areas, urban streams tend to have a smaller fraction of days during the year when the flow is above the annual mean daily flow, and a higher "flashiness" index score. This increase in the "flashiness" index score represents the loss of water storage capability of soils and vegetation due to urbanization. To assess conditions throughout the county, the median stream "flashiness" is calculated each year across all streams where flow is measured. The median stream "flashiness" score represents the degree of water storage ability where half of the streams are flashier and half are less flashy.



Status: Flows from 20 stream sites in King County were measured and their "flashiness" calculated during the 2008 water year (October 2007 — September 2008). Flows for five of these streams were measured by the United States Geological Survey. The median of the "flashiness" index scores across all streams measured in King County has increased between 1945 and 2008 and was lower in 2008 than in 2007.

These data suggest that increased urbanization in King County has resulted in faster surface runoff and peak stream flow rise and fall than previously occurred for some of the streams

Influencing factors: Extensive development can substantially alter stream flow patterns and how they respond to rainfall. In urban areas, surface runoff occurs more quickly than in forested areas because less rainfall is absorbed by the vegetation and soil. Faster runoff in urban areas results in higher peak stream flows rising and falling more rapidly than under forested conditions. Increased peak flows and "flashiness" leads to the most obvious effects from a human perspective — flash flooding and channel erosion. From a biological perspective, streams with greater "flashiness" are disturbed more often. Organisms that survive in these conditions are those that have adapted to more frequent and severe disturbances.

Existing DNRP response: King County has a range of regulatory, educational, and on-the-ground programs to reduce the impacts of development on streams and reduce the amount of "flashiness." The County's Drainage Design Manual directs drainage requirements for all new development.

Priority new actions: In compliance with National Pollutant Discharge Elimination System permit requirements from the state (as part of the federal Clean Water Act), a closer linkage between the effectiveness of stormwater controls and water quality and flows is expected. This may translate into more monitoring at retention / detention ponds to make sure they are working as expected.

Groundwater Water Levels on Vashon-Maury Islands

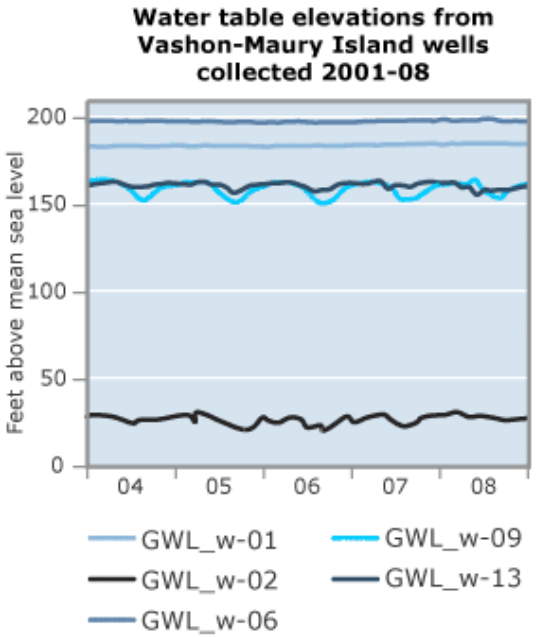
Marin Water Technical Reports

About this indicator: King County has been tracking groundwater quantity on Vashon-Maury Island since 2001. Water levels are tracked frequently in both volunteer and dedicated monitoring wells. King County's goal is to ensure sustainable water quantity through appropriate zoning regulations and high water quality through effective land-use and on-site septic regulations.

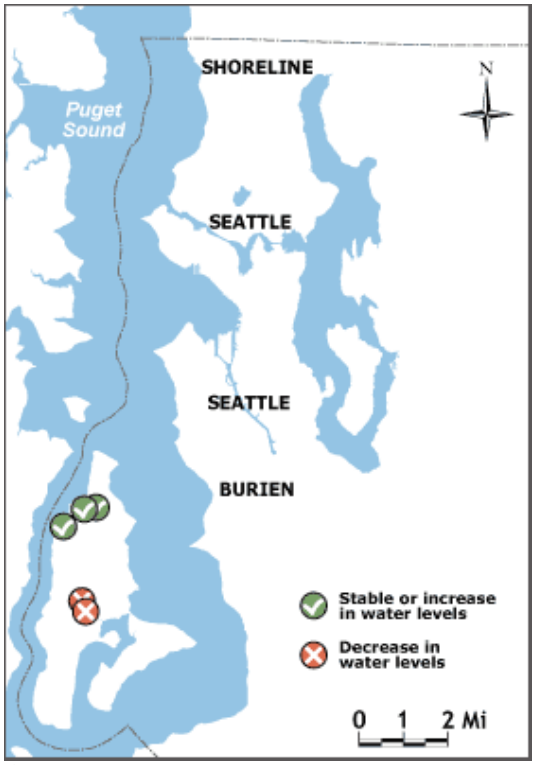
Status: Groundwater levels are generally steady, with some areas increasing and some decreasing.

Influencing factors: Changes in land use and/or vegetation, increases in groundwater withdrawals and climatic changes can adversely affect the quantity of groundwater. Changes in 2007 water levels are also thought to have been caused by reduced precipitation/recharge to island aquifers.

Existing DNRP response: King County plans to continue monitoring Vashon's wells and springs annually for water levels measurements.



Priority new actions: Additional locations have been sought to take water level measurements and increase our understanding of island aquifers. King County intends to produce Vashon-Maury Island-wide water table, contour maps with seasonal variability that will be reported every year.



Groundwater Water Levels on Vashon-Maury Islands
2008 Findings
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Technical Notes

For definitions and more detail.

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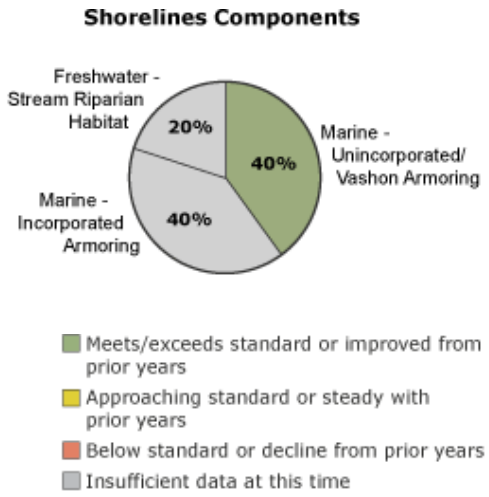
Updated: August 18, 2009

SHORELINES

2008 Rating:

About this indicator: King County's Shorelines Index is derived from two main groupings of results describing the conditions of shoreline along marine and freshwater environments. Wetland conditions do not factor into the index at this time because of inadequate data. Our weighting system applies 40 percent each to armoring in incorporated King County and armoring in unincorporated King County, and 20 percent to stream riparian habitat condition results toward the overall shorelines index.



Status: A high percentage of shoreline has been armored with bulkheads and other structures. Countywide, stream riparian areas in rural areas have higher forest coverage than urban areas.

Influencing factors: Bulkheads impede natural erosion and cut off the supply of sand, rocks and other natural features that are home to native plant and animal species. Less forests along stream riparian corridors result in less stormwater control, less habitat for forest species, and aquatic systems that are less-healthy for fish.

What you can do:

- Consider alternatives to bulkheads and other artificial barriers to marine shorelines.
- Encourage your local city or town to make tree protection regulations stronger.

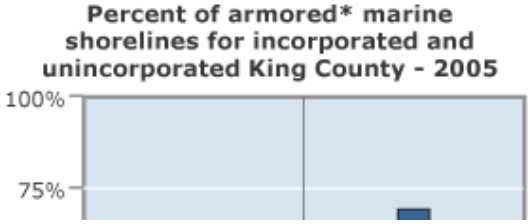
More information about King County's Shoreline Index is available by continuing below for these measures:

- Marine Shoreline Armoring
- Stream Riparian Habitat

Marine Shoreline armoring

About this indicator: King County's Shorelines Marine Environment Index includes information about the conditions of marine shorelines. Our weighting system applies 50 percent towards unincorporated/Vashon Island armoring and 50 percent toward incorporated area shoreline armoring.

Shoreline armoring can take the form of a bulkhead, sea wall, riprap, or any other built impediment to naturally advancing tidewaters. The



WHAT CAN YOU DO?

At Home

Puget Sound Shoreline Stewardship Guidebook

Shoreline Practices for a Healthy Lake, River or Stream

Related Information

Vashon Island Environmental Information

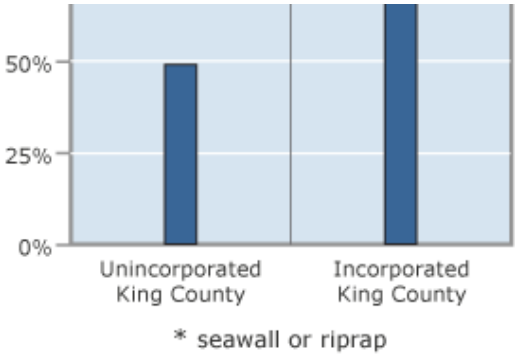
Shoreline Ecology

Shoreline Parcel Characterization

Interactive Shorelines Map

Shoreline Master Plan Updated

amount of shoreline that has been armored can be used as a general indicator of the condition of marine shorelines.



When armoring is present, the health of habitats decline in the nearshore area (the water, shoreline and adjacent upland areas). The nearshore area is an important feeding, nesting and resting ground for many fish and wildlife species, including young salmon as they migrate from the stream of their birth to marine rearing areas.

Status: Conclusions from a baseline survey for shoreline armoring in 2005 show that many beach-feeding sediment sources have been locked up behind armoring. Much of King County's mainland shoreline has been armored — in stark contrast to the relatively natural shorelines along Vashon-Maury Islands.

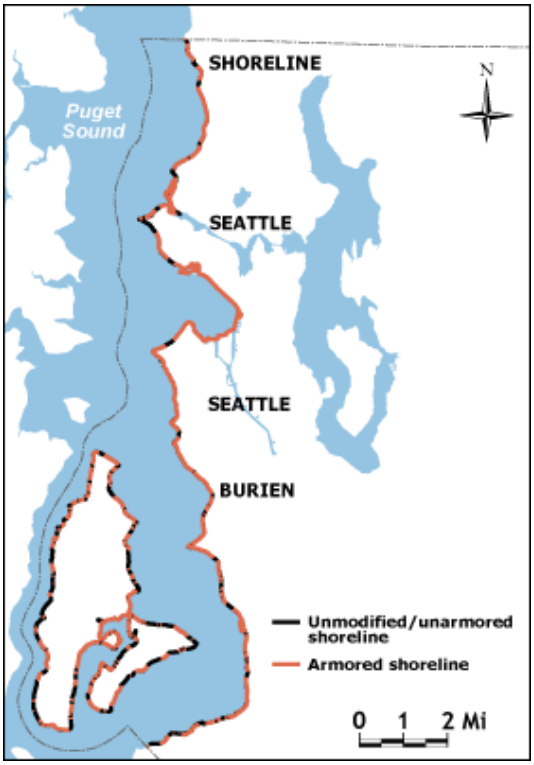
The Central Puget Sound Basin is one of the most heavily urbanized areas within Puget Sound, and King County's armored marine shoreline is indicative of this.

Influencing factors: Property owners build bulkheads to protect their homes and businesses from erosion.

Existing DNRP response: King County is working to decrease the rate of new and currently existing shoreline armoring in unincorporated areas. Recognizing that not all armoring has the same impacts, these reductions will be focused where sediment delivery is restricted and most important. Removing or preventing armoring in deeper, inter-tidal waters is also a priority.

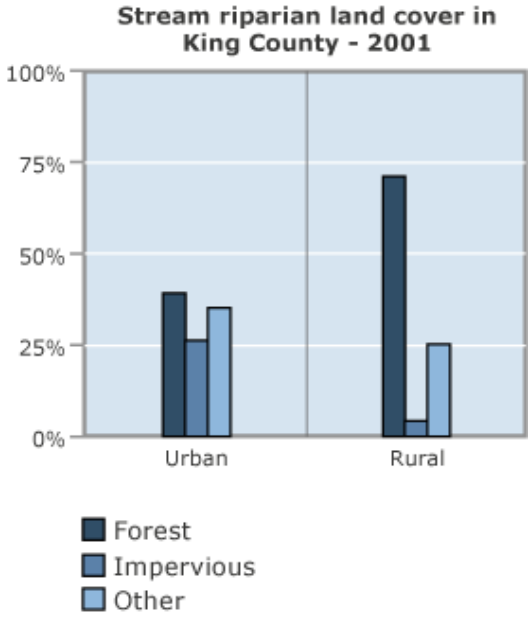
Many Vashon Island waterfront property owners who are applying for flexibility to critical areas regulations through the Rural Stewardship Planning process are being provided with alternatives to bulkhead construction.

Priority new actions: With a baseline in place, follow-up surveys of new armoring every five years will provide useful information. This will allow for a more realistic review of changes that occur naturally and the results of those initiated by King County. Additionally, creating better guidance on the appropriate location and the type of new shoreline armoring is expected in the King County's Shoreline Master Program update.



Marine Shoreline armoring
2005 Findings
Click to download the PDF version.

Stream Riparian Habitat



About this indicator: King County's Shorelines Freshwater Environment Index includes information about the conditions of stream riparian habitats. There is no program for Lakes and River Floodplain Habitats.

Increased population and development have substantially altered the landscape in King County over the past two centuries. This indicator reflects landscape changes that protect forest and aquatic habitats along streamside, or riparian, corridors.

Forest data were derived from a 2001 Landsat image, and impervious area data were derived from 2000 multispectral images. The width of riparian areas along stream banks varied between a minimum 165-foot buffer on each side and expanded to include wetland and steep slope areas. Possible landslide areas that extend past this buffer were also included. This approach to defining "riparian areas" is intended to encompass functional features of adjacent lands that could have been missed if a simple buffer width were used.

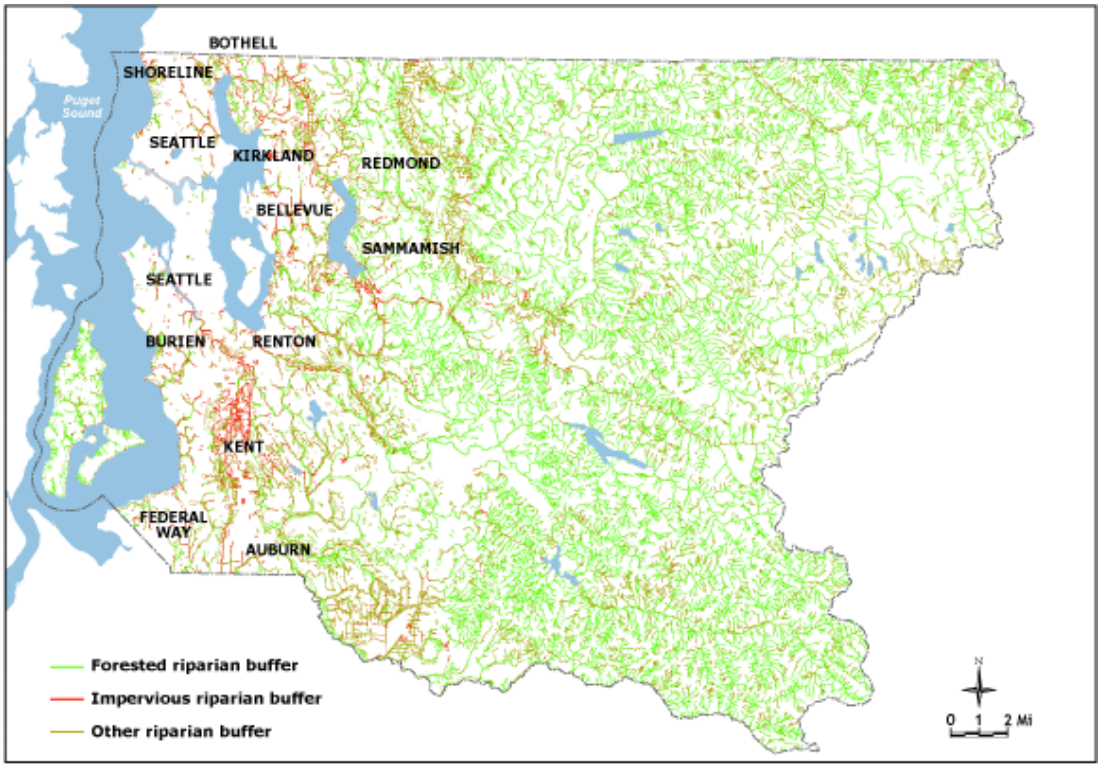
Status: Stream riparian land cover was categorized by urban vs. rural areas. Countywide, stream riparian areas in rural areas (71percent) have higher forest coverage than urban areas (39 percent), as shown in Chart 1 and Figure 1. Impervious coverage along the riparian corridor in urban areas (26 percent) was almost seven times more than in rural areas (4 percent).

Influencing factors: Forests naturally regulate stormwater runoff, protect water quality, provide habitat for many species, and maintain healthy streams and rivers for salmon and other fish. Less forests result in less stormwater control, less habitat for forest species, and aquatic systems that are less-healthy for fish. Increases in impervious surfaces are generally associated with the highest rates of stormwater runoff, the highest degradation in water quality, and the most impacts on forest and aquatic species.

Existing DNRP response: Land-use regulations, which were updated as part of the Critical Areas Ordinance in 2004, attempt to maintain a minimum of 65 percent forest cover and limit impervious areas to less than 10 percent in rural, unincorporated King County. They also provide extra protection for aquatic riparian areas. King County DNRP intends to monitor forest cover and impervious area within riparian zones.

The county works with landowners to restore streamside parcels that have important benefits as aquatic resources. In addition, the King County Water and Land Resources Division's capital projects program builds small and large stream and wetland enhancement projects while protecting public safety. Habitat restoration projects include streamside and wetland planting and in-stream habitat improvements.

Priority new actions: King County is in the midst of updating its 30-year old Shoreline Master Program, which guides land-use activities along shorelines of marine areas and most lakes and streams in unincorporated King County. The first step in this effort is to review current shoreline conditions, including ecology, public access, land use and historic resources. The program update, which is expected to be completed in late 2009, will include changes that will have an effect on this indicator.



Stream Riparian Habitat
2001 Findings
Click to download the PDF version.

Technical Notes

For definitions and more detail.

Back to top

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- Adjustments to the weightings for indicators and performance measures
- Mistakes to fix

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Updated: August 18, 2009

SEDIMENT QUALITY

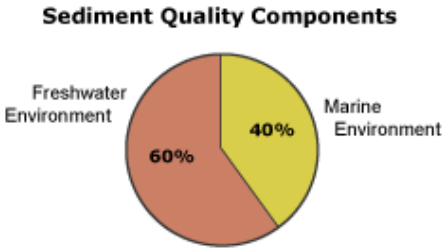
2008 Rating: ↓

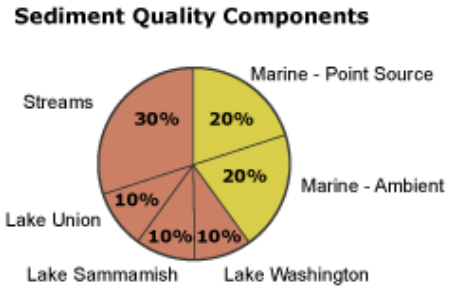
Sediments in Puget Sound

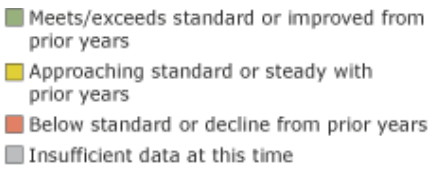
About this indicator: King County monitors sediments in lakes, streams, and at marine sites as part of it's ambient monitoring programs. Sediment quality is an important indicator of environmental health, and along with indicators of water quality, habitat, and the aquatic food web (i.e. plankton, invertebrates, and fish), it can present a clearer picture of environmental quality. Once contaminants are washed into surface waters and attach to bottom sediments they can persist where people can be exposed to them directly or indirectly by eating fish that have been caught in our local lakes, streams, and along shores where some of these contaminants can bioaccumulate up the food chain.

Our weighting system applies 60 percent of the freshwater index and 40 percent of the marine environment index to the overall sediment quality index. The freshwater index is applied equally at 50 percent to lakes and streams. The marine environment index is applied equally at 50 percent to ambient sites and 50 percent to point source sites.

Status: Overall most of the lake stations found to have chemical concentrations high enough to probably be causing adverse effects in aquatic organisms were located in Lake Union. Contaminants were found in streams in concentrations high enough to probably be causing adverse effects in aquatic organisms. Of the ambient sampling, most stations passed all of the chemical criteria.







What you can do:

- Properly dispose of pharmaceuticals, harmful chemicals and paints, instead of pouring them down the drain or allowing them to run off the ground.
- Minimize use of fertilizers and pesticides by practicing natural yard care.
- Wash your car on the grass or gravel instead of on the street or driveway, or take it to a car wash.
- Properly dispose of or manage met and livestock wastes.

More information about King County's Sediment Quality Index is available by continuing below for these measures:

- Large Lakes Sediment Quality

WHAT CAN YOU DO?

At Home

Puget Sound Shoreline Stewardship Guidebook

Shoreline Practices for a Healthy Lake, River or Stream

At Work

Reduce your runoff, get a fee discount

Learn Best Practices to reduce Stormwater Pollution

Understand Industrial Waste Discharge Limits

Related Information

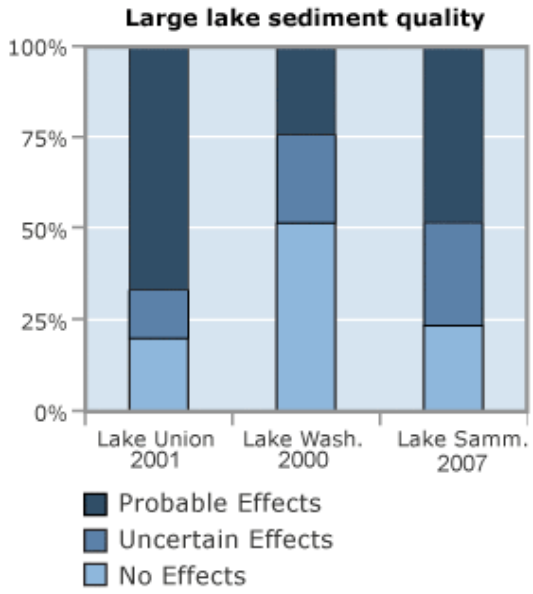
Puget Sound Marine Topics

Puget Sound Watershed

Vashon Island Environmental Information

- Stream Sediment Quality
- Marine Point Source Sediment Quality
- Marine Ambient Sediment Quality

Large Lakes Sediment Quality



About this indicator: To understand what effect chemicals in sediments may be having on aquatic life, chemical concentrations are compared to sediment quality guidelines. The Washington State Department of Ecology has not promulgated numeric freshwater sediment chemical standards, but has evaluated existing numeric sediment quality guidelines and proposed a new set of numeric guidelines, known as the floating percentile method, for use in Washington State freshwater sediments.

In addition to using the floating percentile-derived guidelines, a more widely used set of guidelines that were developed by Smith et al (1996) in the Great Lakes region in 1996 were also used. These Smith guidelines represent a good balance between sensitivity and efficiency and also include guidelines for organochlorine pesticides (DDT, dieldrin, etc.), which are not included among the floating point guidelines.

The Major Lakes Sediment Monitoring Program was begun in 1999 in Lakes Sammamish, Washington, and Union. An updated 10-year program was launched in 2007 to collect sediment quality information near storm drains, swimming beaches, and wildlife habitat areas. Additionally, a two-tiered sampling design allows for the assessment of long term trends in the deep main basins of the three major lakes.

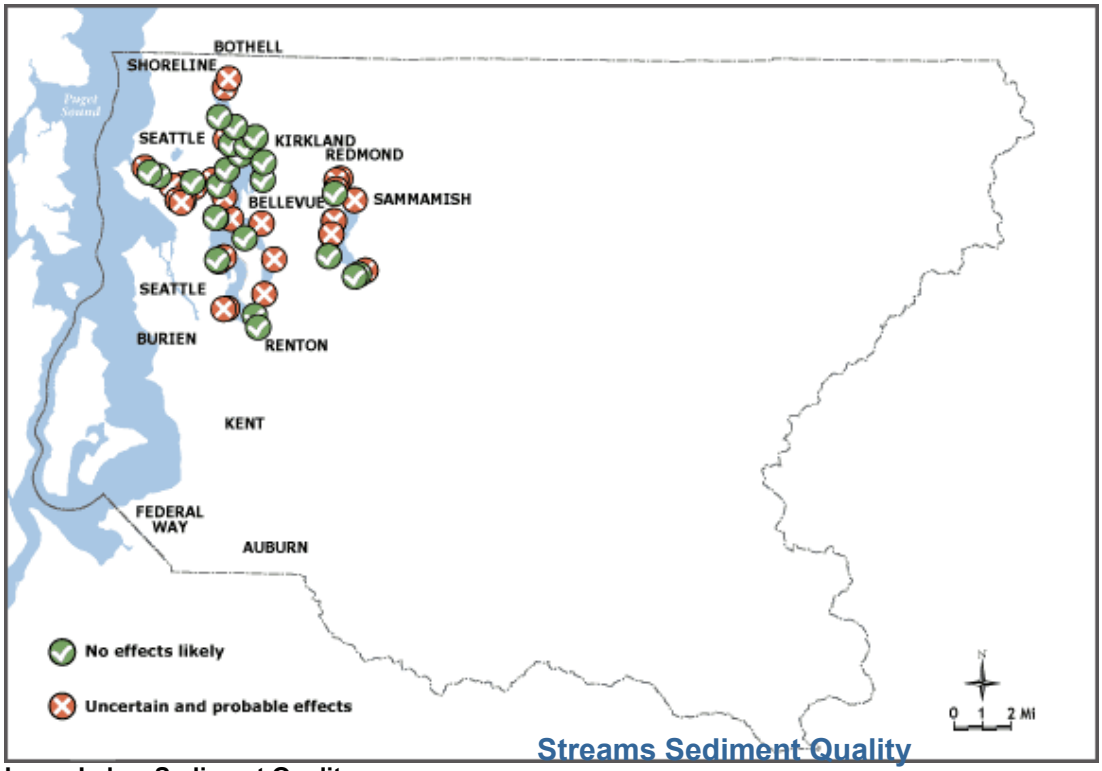
This indicator is divided into three ratings: 1) adverse effects to aquatic organisms from chemical concentrations are unlikely; 2) adverse effects to aquatic organisms from chemical concentrations are uncertain; and 3) adverse effects to aquatic organisms from chemical concentration are probable. The three large lakes, Lake Washington, Union and Sammamish are weighted equally at 30 percent each for this indicator.

Status: In 2007, samples were not collected from Lakes Union and Washington. For the purpose of rating these lakes, the data from 2006 is carried over until the next sampling event. Samples from 18 locations in Lake Sammamish were collected and analyzed for a variety of organic and metals contaminants. These data were compared to sediment quality guidelines. Results indicated that at 10 out of the 18 locations chemical concentrations were high enough to suggest that adverse effects to aquatic organisms are likely. At four of the locations, concentrations were at a level where effects are uncertain, and concentrations at the last four locations suggest that effects are unlikely.

Influencing factors: Point sources, stormwater, and other discharges such as irrigation runoff, can wash contaminants into surface waters.

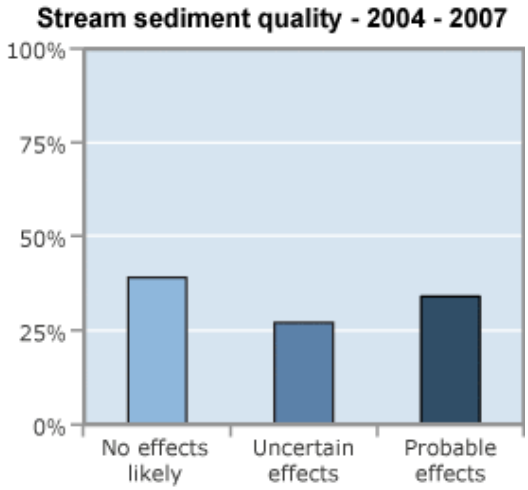
Existing DNRP response: King County is committed to monitoring large lake sediment quality to ensure their continued health, as well as the health of the public who live near or use the lake's many resources.

Priority new actions: The updated 10-year Major Lakes Sediment Monitoring Program will continue to collect sediment quality information near storm drains, swimming beaches, and wildlife habitat areas. King County will continue to conduct hazardous waste management and outreach to reduce contaminant discharges, and coordinate trouble calls to investigate illegal and accidental spills reported by citizens.



Streams Sediment Quality

Large Lakes Sediment Quality
2000 - 2007 findings



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In addition to using the floating percentile-derived guidelines, a more widely used set of guidelines that were developed by Smith et al. in the Great Lakes region in 1996 were also used. These Smith guidelines represent a good balance between sensitivity and efficiency and also include guidelines for organochlorine pesticides (DDT, dieldrin, etc.), which are not included among the floating point guidelines.

The Stream Sediment Monitoring Program was begun in 1987 in WRIAs 8 and 9 as part of the overall Lakes and Streams Ambient Monitoring Program. An updated 10-year program began in 2004 to monitor the effects of all sources (point sources, stormwater, and other discharges) to the streams. Additional parameters were added to the existing sediment monitoring program to better understand the range of contaminants that affect sediment quality. A two-tiered sampling design allows for the assessment of sediment quality in individual stream basins as well as long-term trend analysis.

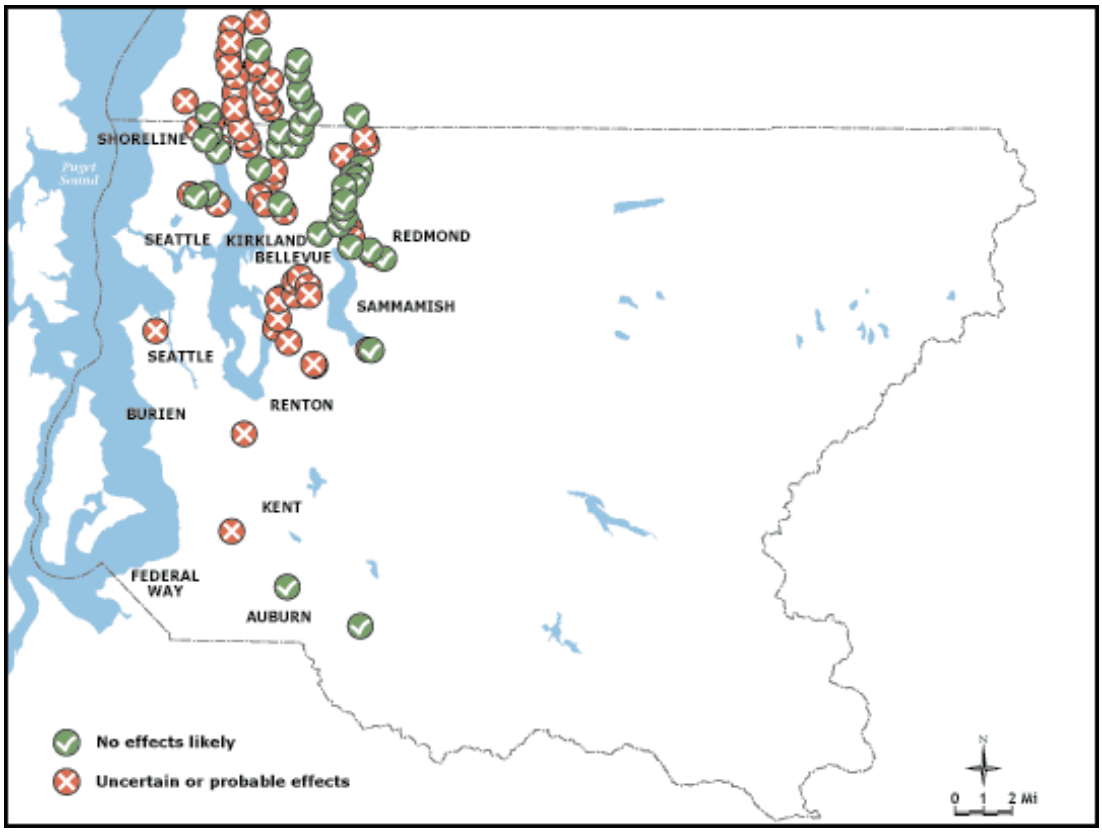
This indicator is divided into three ratings: 1) adverse effects to aquatic organisms from chemical concentrations are unlikely; 2) adverse effects to aquatic organisms from chemical concentrations are uncertain; and 3) adverse effects to aquatic organisms from chemical concentration are probable.

Status: Samples were collected from 93 stations in King County stream between 2004 and 2007. Results indicated that sediment at 36 of the stations were likely having no adverse effects on sediment biota, effects were uncertain at 25 of the stations, and sediments were likely having adverse effects at 32 stations. Metals, phthalates (chemical plasticizer found in plastics) and legacy pesticides, such as DDT, continue to be a concern and are likely causing adverse effects to aquatic organisms in King County streams.

Influencing factors: Point sources, stormwater, and other discharges such as irrigation runoff, can wash contaminants into surface waters.

Existing DNRP response: King County is committed to monitoring stream sediment quality to ensure their continued health, as well as the health of the public who live near or use the streams' many resources.

Priority new actions: The updated 10-year Streams Sediment Monitoring Program will continue to collect sediment quality information to monitor the effects of all sources (point sources, stormwater, and other discharges) to the streams. King County will continue to conduct hazardous waste management and outreach to reduce contaminant discharges, and coordinate trouble calls to investigate illegal and accidental spills reported by citizens.



Streams Sediment Quality
2004 - 2007 findings

Marine Point Source Sediment Quality

About this indicator: Washington State's Sediment Management Standards seeks to reduce and ultimately eliminate adverse effects on biological resources and any significant human health risk from surface sediments in marine, low salinity or estuarine and freshwater environments. The Sediment Quality Standard, or "no adverse effects level," is the most protective chemical standard for marine sediments. The Cleanup Screening Level, or the "minor adverse effects level," helps identify areas of potential concern that may be designated cleanup sites.

The Sediment Quality Standard has been selected as the indicator because it is the more sensitive of the two criteria for environmental protection. Data from 2001 are used because they represent the most recent comprehensive survey of sediment quality in King County. In 2001, sediment sites were divided into two categories. Ambient sites were chosen to reflect general, or ambient, environmental conditions. Point source stations are located near King County wastewater treatment plant outfalls and combined sewer overflow outfalls. Data from 2001 is still relevant for analysis because sediments (particularly those that are polluted) move slowly and do not change much over five years unless clean up efforts have been taken.

Details related to a 2007 sampling event for ambient stations are presented with the indicator for Marine Environment — Ambient Sediment Quality.

Status: Of the 15 point source-related sites that exceed the Sediment Quality Standard, eight do not require clean up or monitoring. Six of the remaining seven point source sites are associated with

combined sewer overflow outfalls, and one is associated with an emergency overflow.

Influencing factors: Many pollutants found in the environment are not detected in water, but are attached to sediment particles. Once in the sediments, these pollutants can directly harm marine organisms or be reintroduced to the food chain through the organisms found in marine sediments.

Existing DNRP response: Strategies to achieve the outcome goal focus on collaborating with other organizations, including the City of Seattle, Port of Seattle, and Boeing, with which King County has joined to form a public-private partnership called the Lower Duwamish Waterway Group. This group will be funding cleanups at "early action sites" as part of the Lower Duwamish Waterway federal Superfund process. A partial cleanup was completed in 2004 at the first of these sites, the Duwamish/Diagonal Way site. A follow-up cleanup was completed in 2005.

Priority new actions: The cleanup of the Lower Duwamish Waterway includes a multi-agency, source-control effort to reduce the potential for future recontamination. Additional sediment site cleanups may be completed later under Superfund, or as part of other activities in the Duwamish waterways. It is expected that three to five additional sites could be addressed by 2010.

Marine Point Source Sediment Quality
2001 findings

Marine Ambient Sediment Quality

About this indicator: Washington State's Sediment Management Standards (SMS) seek to reduce and ultimately eliminate adverse effects on biological resources and any significant human health risk from surface sediments in marine, low salinity or estuarine and freshwater environments. King County developed a new ambient marine sediment sampling program in 2007. Data from subtidal marine sediment samples collected from stations throughout the Puget Sound area within King County were compared to the SMS chemical criteria (Chapter 173-204 WAC).

As part of the new plan, King County will be collecting subtidal marine sediment samples from eight locations in Elliott Bay, every two years, and from three locations in the Puget Sound main basin and three associated embayments (Salmon Bay, Fauntleroy Cove, and Quartermaster Harbor), every five years. In 2007, sediment chemistry data from 14 locations were used for this indicator.

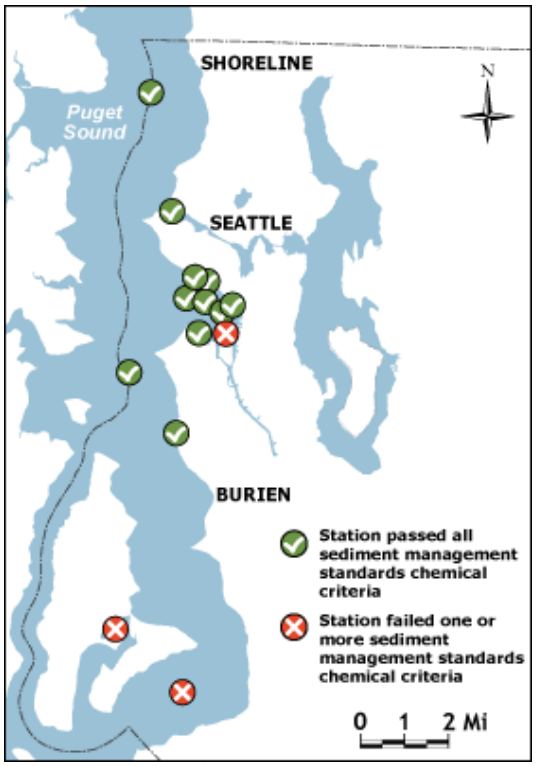
Status: Eleven of 14 stations (79%) passed all SMS chemical criteria. Three of 14 stations (21%) failed one or more SMS chemical criteria. The station in Quartermaster Harbor failed the mercury

criterion, the station in East Passage failed the bis(2-ethylhexyl) phthalate criterion, and the station at Harbor Island failed the criteria for mercury and butyl benzyl phthalate.

Influencing factors: Many pollutants found in the environment are not detected in water, but are attached to sediment particles. Once in the sediments, these pollutants can directly harm marine organisms or be reintroduced to the food chain through the organisms found in marine sediments.

Existing DNRP response: King County will continue to monitor ambient sediment quality in its marine waters every two years in Elliott Bay and every five years in the central basin of Puget Sound and associated embayments. No sediment sampling was scheduled for 2008, so there is not an update to this environmental indicator. Sediment samples will next be collected from the eight Elliott Bay stations in 2009 and 2011 and from the other six ambient stations in 2012.

Priority new actions: There are no "priority new actions" at this time.



Marine Ambient Sediment Quality
2007 findings

Technical Notes

For definitions and more detail.

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INDICATORS - 2008 ARCHIVE

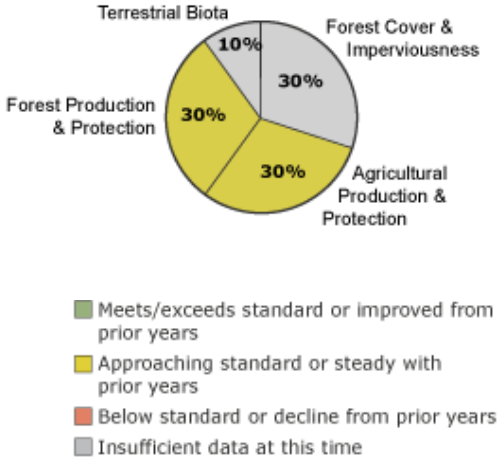
LAND AND RESOURCES

About this Indicator

This indicator summarizes the status of conditions that address the conservation of land and other natural resources in King County. The land and resources included in this indicator are generally ones that King County's Department of Natural Resources and Parks seeks to improve through its program and service delivery. While DNRP can track certain aspects of agriculture and forestry protection and productivity, we have the ability to only periodically track levels of forest cover and imperviousness and have no regular or comprehensive way to track and understand changes in terrestrial/land-based biota (plants and animals).

2008 Rating

Land & Resources Components



Status

Agriculture and forestry productivity and protection levels in King County are generally stable and near their targeted levels. Currently there are 41,150 acres of zoned farmland in the county, some of which is not farmable due to wetlands, steep slopes and other conditions. The development rights on 13,208 agricultural acres have been purchased through the Farmland Preservation Program.

Forest protection levels remain at or near targets, with about 30% of the rural acres covered by stewardship plans or enrolled in incentive programs.

Influencing factors

A wide range of State and Federal policies, economic conditions, and the decisions of individual property owners affect the land and resources conservation practices here. Markets for agricultural and timber products, priorities of landowners, conservation incentives of the Farm Bill, and consumer preferences all bear on landowner decisions that affect conservation.

Budget allocations, regulatory and policy changes all play a role in land conservation and acquisition activities. The ability of the Farmland Preservation Program to purchase development rights depends on the available funding and farmland values vary widely depending on the location of the farm in the county.

DNRP response

DNRP has been advancing a range of innovative programs to encourage and support the conservation of land and resources in King County. These include:

- Puget Sound Fresh;
- Transfer of Development Rights program;
- Local Action on Biodiversity;

WHAT CAN YOU DO?

At Home

Create your own Native Plant Landscape

Volunteer for a Habitat Restoration Project

At Work

Develop a Forest Stewardship Plan

Reduce Holiday Food Waste

Wasteless Holiday

Related Information

DNRP Budget And Organization Chart

Forestry Topics

King County Ecological Lands

Greenprint for King County

GIS Center iMap

- The Farmland Preservation Program; and
- Various Forest Conservation programs

What you can do:

Landowners interested in improving conservation practices have a range of useful; resources to draw upon. Important actions may include:

- Develop a conservation and/or biodiversity protection plan
- Transfer development rights

As a consumer in King County, you can help maintain the viability of local agriculture by purchasing from local farmers, see: http://www.pugetsoundfresh.org More information about King County's Land and Resources indicators is available by continuing to these indicators:

- Forest Cover & Imperviousness
- Agricultural Production & Protection
- Forest Production & Protection
- Terrestrial Biota

Back to top

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Updated: August 18, 2009

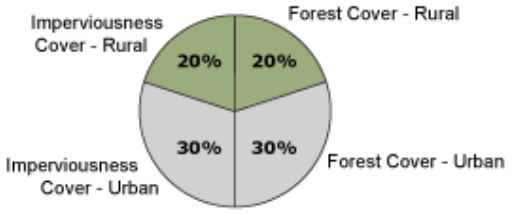
FOREST COVER AND IMPERVIOUSNESS

2008 Rating:

About this indicator: Increased population and development have substantially altered the landscape in King County over the past two centuries. Of particular interest for the protection of salmon and other aquatic resources is the conversion of forest and natural land cover to hard or impervious surfaces, such as roofs, sidewalks parking lots and roads.

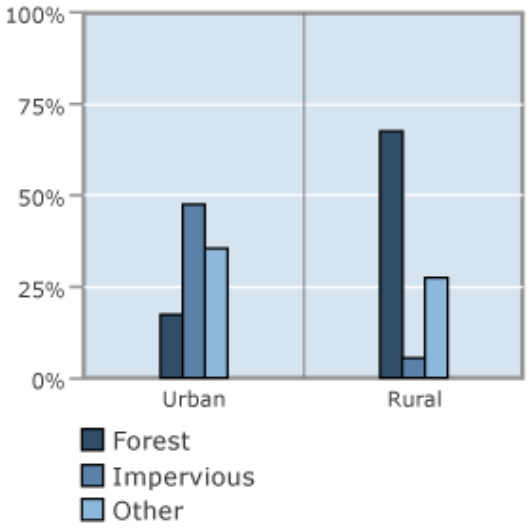
This indicator reflects landscape changes that protect forest and aquatic habitats. The percent of the landscape maintained as forest, and the percent that has been converted to impervious area, is presented watershed-wide for all of King County. Forest data were derived from a 2001 Landsat image, and impervious area data were derived from 2000 multispectral images.

Forest Cover & Imperviousness Components



- Meets/exceeds standard or improved from prior years
- Approaching standard or steady with prior years
- Below standard or decline from prior years
- Insufficient data at this time

Terrestrial land cover for King County - 2003



Status: Total land cover was categorized by urban vs. rural areas. Countywide, rural areas (67 percent) have higher forest coverage than urban areas (17 percent). Impervious coverage in urban areas (47 percent) was almost 10 times more than in rural areas (5 percent).

Influencing factors: Forests naturally regulate stormwater runoff, provide habitat for many species and maintain healthy streams and rivers for salmon and other fish. Less forests result in less stormwater control, less habitat for forest species and aquatic systems that are less healthy for fish and other species. Increases in impervious surfaces are generally associated with the highest rates of stormwater runoff, the highest degradation in water quality and the most impacts on forest and aquatic species.

Existing DNRP response: Land-use regulations, recently updated as part of the Critical Areas Ordinance in 2004, attempt to maintain a minimum of 65 percent forest cover and limit impervious areas to less than 10 percent in rural, unincorporated King County. King County DNRP intends to monitor forest cover and impervious areas.

Priority new actions: King County is in the midst of updating its 30-year old Shoreline Master Program, which guides land-use activities along shorelines of marine areas and most lakes and streams in unincorporated King County. The first step in this effort is to review current shoreline conditions, including ecology, public access, land use and historic resources. The program update, which is expected to be completed in late 2008, will include changes that will have some effect on this

WHAT CAN YOU DO?

At Home

Volunteer for a Habitat Restoration Project

At Work

Develop a Forest Stewardship Plan

Smart Growth

Related Information

Forestry Topics

King County Ecological Lands

Greenprint for King County

GIS Center iMap

Native Plants

Snoqualmie Valley farmers' conservation efforts

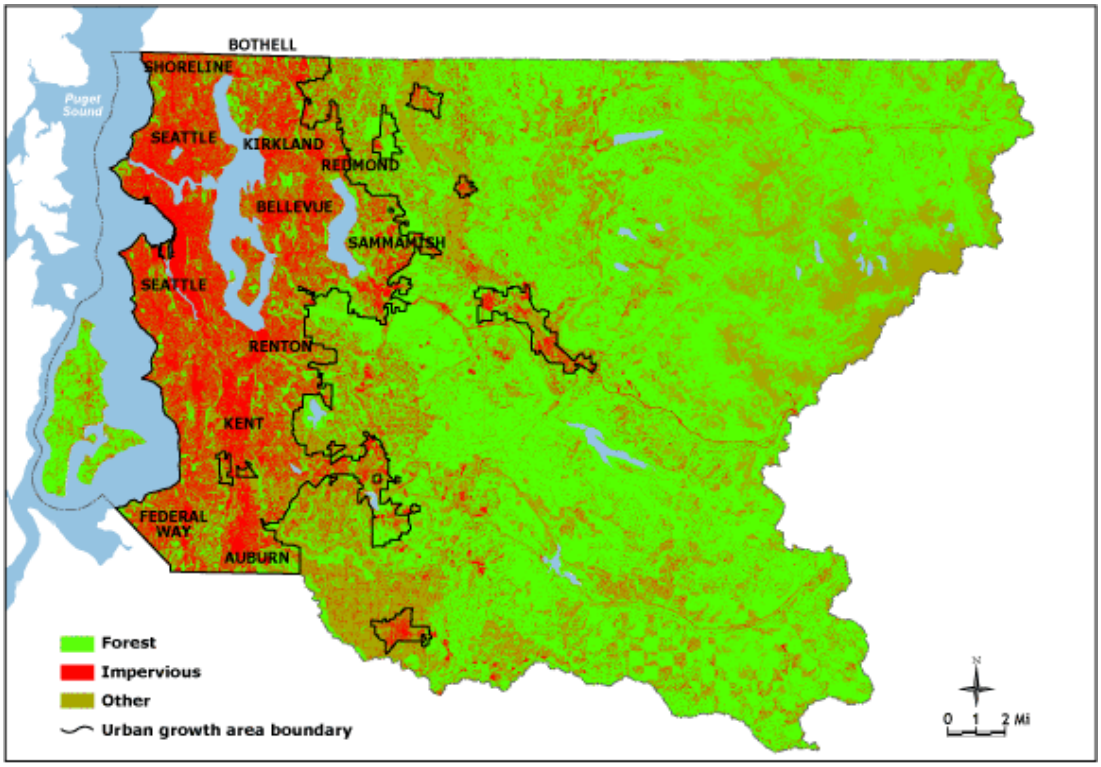
Plant Biodiversity

PCBs Threaten Duwamish River Cleanup

Arsenic and lead contamination in King County soil

Wa Ecology soil study of King County

indicator.



Forest covered and impervious areas
2003 Findings
Click to download the PDF version.

Technical Notes

For definitions and more detail.

Back to top

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Updated: August 18, 2009

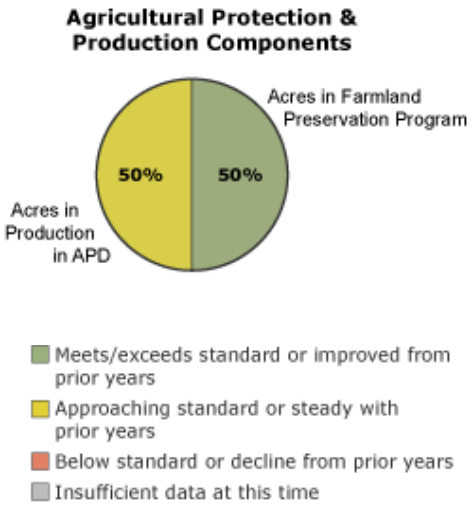
INDICATORS - 2008 ARCHIVE

AGRICULTURAL PRODUCTION & PROTECTION

2008 Rating: ⇔

About this indicator: Agriculture is an important land use in the county. The production of food is a critical contribution to supporting the healthy diets of King County citizens. Farms provide important benefits such as providing habitat for wildlife and fish, improve water quality, and offer opportunities to learn about our local environment.

One major challenge to maintaining agriculture in the county is the ability of farmers to find affordable land. The Farmland Preservation Program helps preserve agriculture by purchasing the development rights from farmland. This helps reduce the cost of farmland by discouraging other non-farm uses.



Existing DNRP response: In cooperation with the King County Agriculture Commission, DNRP continues to identify and prioritize farms that could be enrolled in the Farmland Preservation Program. As funding becomes available, we work with the landowner to purchase their development rights.

We monitor and suggest updates to the County's Comprehensive Plan and Code for policies and regulations that adversely affect (or don't reflect the changing nature of) agriculture. We work to develop incentives that encourage farming in the county.

What you can do:

- Purchase local farm products. For a list of local farms see www.pugetsoundfresh.org
- Support local farm preservation efforts
- If you own land that is not being farmed, consider enrolling it the FarmLink Program. Please see www.cascadeharvest.org

More information about King County's Agricultural Produciton & Protection Index is available by continuing below for these measures:

- Acres in Farmland Preservation Program
- Acres in Production in APD

Acres in Farmland Preservation Program

About this indicator: The Farmland Preservation Program helps preserve agriculture by purchasing the development rights from farmland. This helps reduce the cost of farmland by discouraging other non-farm uses.

Status: The development rights on 13,208 acres have been purchased through the Farmland

WHAT CAN YOU DO?

At Home

Create your own Native Plant Landscape

Volunteer for a Habitat Restoration Project

At Work

Develop a Forest Stewardship Plan

Smart Growth

Related Information

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GIS Center iMap

Native Plants

Snoqualmie Valley farmers' conservation efforts

Plant Biodiversity

PCBs Threaten Duwamish River Cleanup

Arsenic and lead contamination in King County soil

Wa Ecology soil study of King County

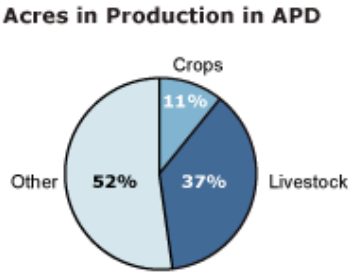
Preservation Program

Influencing factors: The ability of the Farmland Preservation Program to purchase development rights depends on the available funding. Farmland values vary widely depending on the location of the farm in the county

Priority new actions: Continue to explore new and enhanced funding options for the Farmland Preservation Program.

Acres in Production in APD

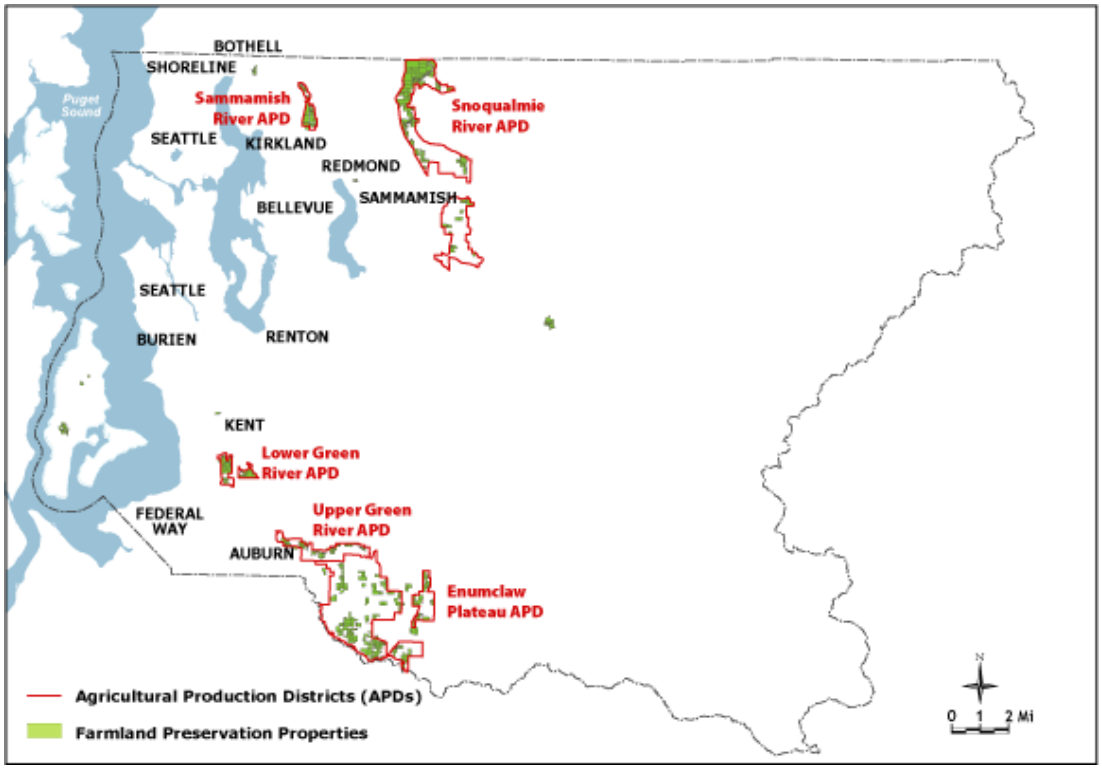
About this indicator: The number of acres in production is an important indicator of the health of agriculture in the county. Local food production is critical to the food security of the county.



Status: Currently there are 41,150 acres of zoned farmland in the county. Some of that land is not farmable due to wetlands, steep slopes and other conditions. Therefore, 23,000 acres are actually farmed. In addition there are 25,000 acres of land farmed in other areas of the county, mainly on RA zoned land. When taking into account the variable methods in measuring farmed properties from one reporting period to another, the amount of farmed acres has remained relatively stable.

Influencing factors: There are other uses than agriculture allowed in the APDs. One of the more popular uses is for lifestyle reasons. This reduces the ability of a person who wants to farm to compete successfully for land

Priority new actions: Continue to develop marketing and regulatory incentives to encourage farming throughout the county



Agriculture Production District in King County
2003 Findings
Click to download the PDF version.

Technical Notes

For definitions and more detail.

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Updated: August 18, 2009

FOREST PRODUCTION AND PROTECTION

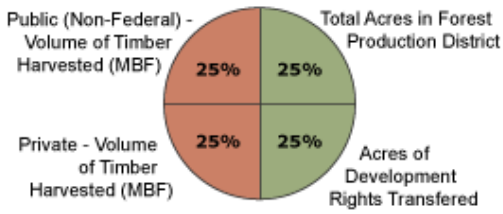
2008 Rating: ⇔

About this indicator: This forestry indicator combines a look at forest land conservation with forest production trend information. The indicators include both private and public lands.

The Forest Production District (FPD), which is the county's designated forestland of long term commercial significance, is 824,000 acres, over half of King County. Another 52,630 acres have been identified as Rural Forest Focus Areas (RFFA); these are blocks of the Rural Area that are predominantly forested.

The number of acres of forestland in the FPD and the number of acres of forested land conserved through easements limiting the development rights are used as indicators of long term conservation of working forest.

Forest Protection & Production Components



- Meets/exceeds standard or improved from prior years
- Approaching standard or steady with prior years
- Below standard or decline from prior years
- Insufficient data at this time

Washington Department of Revenue data is used to track the volume of timber harvested in King County each year. It is an indicator of the economic activity of forestry reflecting the general health of the forest industry. It is broken down into public and private lands.

DNRP Response: The DNRP Forestry Program works on County policy to encourage forestry and to ensure that the County is meeting its obligations under the state's Growth Management Act to protect forestland of long term commercial significance. Policies encourage both the protection of the land base and support for continued forestry as a commercial activity. The Department staffs the Rural Forest Commission, which advises on County policies, regulations and programs relevant to forestry. The Department also has a Transfer of Development Rights (TDR) program that works with landowners to secure development rights easements.

What you can do

- Develop a forest stewardship plan for your forested property
- Learn how to protect your home from wildfire and have a healthy forest too
- Consider enrolling protecting your forested land through a property tax reduction or transfer of development rights program

More information about King County's Agricultural Produciton & Protection Index is available by continuing below for these measures:

- Acres of Development Rights Transferred
- Total Acres in Forest Production District
- Private — volume of timber harvested (MBF)
- Public (non-federal) — volume of timber harvested (MBF)

Acres of Development Rights Transferred

WHAT CAN YOU DO?

At Home

Create your own Native Plant Landscape

Volunteer for a Habitat Restoration Project

At Work

Develop a Forest Stewardship Plan

Smart Growth

Related Information

Forestry Topics

King County Ecological Lands

Greenprint for King County

GIS Center iMap

Native Plants

Snoqualmie Valley farmers' conservation efforts

Plant Biodiversity

PCBs Threaten Duwamish River Cleanup

Arsenic and lead contamination in King County soil

Wa Ecology soil study of King County

About this indicator: This indicator looks at acres preserved in forest in the Forest Production District and Rural Forest Focus Areas. Securing easements on private forestland to restrict development is a relatively new conservation tool in King County.

Status: The development rights on 92,841 acres of forest have been purchased through the King County TDR program. Most of the acreage shown, some 89,520 acres, represents the Snoqualmie Tree Farm.

Influencing factors: Adding to the acreage under easements is a result of complicated negotiations, funding availability, and willingness of landowners to enter into easement agreements.

Priority new actions: DNRP is not only working to protect large forested tracts, but is also working with the owners of smaller forest acreages that experience strong pressure to convert forest to urban land uses.

Total Acres in Forest Production District

About this indicator: Total acreage in the FPD zoning designation is stable while land use patterns within the FPD are subject to change. Population growth puts pressures on the forest industry, as the land becomes more valuable for residential uses and encroaching development makes it more difficult to conduct forestry operations.

Status: Currently there are 824,000 acres in the Forest Production District. Of this, 233,400 acres are owned by large commercial interests. This is a decrease of 53,000 acres since 1997.

Influencing factors: An analysis of private land ownership changes reveals that forestland in the FPD is gradually being subdivided and sold by large timber companies to smaller individual and commercial ownerships. The smaller parcels are more likely to be developed for residential purposes and not managed for commercial forestry. Government purchases of commercial forestland in the FPD in recent years also have tended to take land out of forest production.

Priority new actions: Two proposed 2008 Comprehensive Plan policies address the public land in the FPD. One recognizes the large area of the FPD that is publicly owned, encourages continued forest management on these lands, and directs the County to collaborate with other land managers. The second directs the County to encourage continued private forestry in its acquisition efforts, and directs that acquisitions in the FPD be evaluated to ensure that the long term commercial significance of the FPD is not compromised.

Private — volume of timber harvested (MBF)

About this indicator: Timber sale volume is used as an indicator of the general health of the forest industry. Timber harvests vary widely from year to year, and it is difficult to determine whether the overall decrease over the six years of available data represents a trend. It will be valuable to continue to track the data to determine if commercial forestry activity declines over time.

Status: In 2007 timber harvested on private land totaled 76.2 million board feet valued at $30.1 million. This is more volume than in 2006, but less than in 2005 and 2004.

Influencing factors: The data show that forest harvest is variable from year to year. Probably the biggest influencing factor in how much timber is harvested in any year is the price of logs, which varies considerably depending on housing markets and other factors. In contrast, the harvest levels on public land are more likely a result of long term plans rather than a response to markets.

Public (non-federal) — volume of timber harvested (MBF)

About this indicator: The variation in harvest levels on public land does not follow the trend on private lands. They both vary widely, but do not track each other from year to year.

Status: Timber harvests on public lands in King County totaled 26.5 million board feet valued at $8.3 million in 2007.

Influencing factors: A large part of the FPD, sixty-eight percent, is in public ownership, which preserves the forest land base, but does not necessarily contribute to forestry activity. The USDA

Forest Service ownership, the Cedar River and Tolt River watersheds owned by the City of Seattle, the State Natural Resource Conservation Areas, and the King County natural areas, are restrictive in their land management policy, allowing no or very limited forestry activities.

Priority new actions: New proposed Comprehensive Plan policies encourage continued forest management on public lands in the FPD and direct that the County's acquisitions of private forestland in the FPD be evaluated to ensure that the long term commercial significance of the FPD is not compromised.

Technical Notes

For definitions and more detail.

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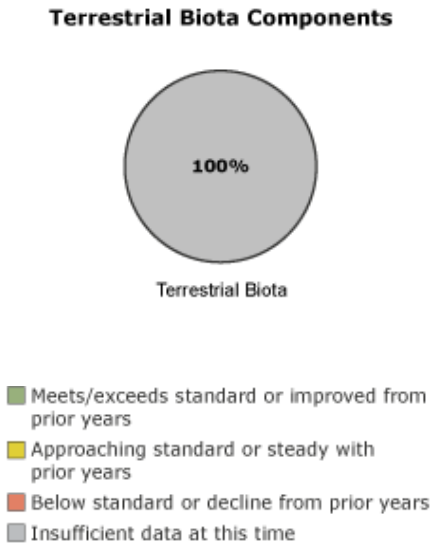
Updated: August 18, 2009

TERRESTRIAL BIOTA

2008 Rating:

Indicator: King County's Terrestrial Biota Index is weighted at 10 percent of the entire Land & Resources Index. Mammals, birds, amphibians, and biodiversity should be included in the assessment of wildlife health, but there is no consistently collected data regarding these animals in King County. There is currently no plan to develop a long-term population monitoring program.

Influencing factors: Over the past two centuries, increased population and development have substantially altered King County's landscape. Less forests and natural land cover reduce the amount of habitat for animal and plant species. Pollutant runoff, loss of forest cover, wetland ecological health, and of invasive and non-native plants are a few factors that can have an affect on terrestrial biota populations.



Existing DNRP response: Although there is no existing population monitoring for terrestrial biota in King County, WLR continues to implement programs focusing on minimizing degradation from development and pollutant runoff from farms, preventing the loss of forest cover, and implementing watershed improvement projects. WLR's capital projects program builds wetland enhancement projects. Basin stewards work with the local community to respond to resident's inquiries for watershed protection, coordinate efforts among diverse public agencies, facilitate watershed project implementation, provide assistance to monitoring programs and provide public education opportunities.

Priority new actions: Currently, WLR is working to update the policy on beavers and is developing strategies and actions to address this issue.

What you can do: Contact your elected officials and express how important wildlife protections are to you.

More information about King County's Terrestrial Biota is available by continuing to these pages:

- Beavers
- King County Biodiversity Report 2008
- Aquatic Plants
- Mussels

Technical Notes

For definitions and more detail.

WHAT CAN YOU DO?

At Home

Home & garden hints for healthy streams & salmon

Salmon Safe Practices

Salmon Smart: A Guide to Help People Help Salmon

At Work

Volunteer for a Habitat Restoration Project

Related Information

Salmon and Trout Topics

Shoreline Parcel Characterization

Green-Duwamish Habitat Projects

Clean river for fish and wildlife

Salmon ladder award

Toxic Stormwater Threatens Sea Life

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Updated: August 18, 2009

HEALTH AND SAFETY

About this Indicator

This new indicator summarizes the status of several conditions that contribute to the health and safety of King County residents. These conditions are ones that King County's Department of Natural Resources and Parks seeks to improve through its program and service delivery.

2008 Rating

Status

All sub-indicators are approaching standards and/or are stable:

- Reducing toxic burdens in children and vulnerable populations
- Utilization rates of parks and trails
- Access to clean and safe surface waters
- Access to potable groundwater on Vashon Island

Influencing factors

Many broad societal and economic factors, as well as individual decisions, bear on conditions that affect the health and safety of King County residents.

Utilizations rates of parks and trails are affected by weather, the team sport programs of school districts, and the popularity of private facilities and programs that serve local residents.

The toxic burdens to children and vulnerable populations in our communities are influenced by national and state laws, product design decisions of consumer product manufacturers, and exposure levels that vary by household.

Access to clean and safe surface waters of streams, rivers, lakes and marine waters are influenced by decisions of households and local businesses, federal and state policies, and legacies of prior industrial activities.

DNRP response

The Local Hazardous Waste Management Program (LHWMP) has a range of innovative programs underway to combat exposure to and build-up of toxic substances in humans and the environment. LHWMP is focusing its efforts to increase

- the protection of King County's most vulnerable residents by:
- Working 'upstream' to reduce the production of hazardous wastes and materials;
- Facilitating 'product stewardship' policies and programs; and

WHAT CAN YOU DO?

At Home

Shoreline Practices for a Healthy Lake, River or Stream

Embrace Natural Yard Care

Home & garden hints for healthy streams & salmon

At Work

Reduce your runoff, get a fee discount

Learn Best Practices to reduce Stormwater Pollution

Erosion Control for Construction Sites

Apply Integrated Pest Management in your landscaping

Related Information

DNRP Budget And Organization Chart

King County Watersheds

Salmon and Trout Topics

Shoreline Master Program

Streams Water Quality Monitoring Data

Groundwater data

Normative Flow Studies

Interactive Hydrography Map

- Enhancing hazardous waste management capacities and responsibilities

To improve access to clean and safe surface waters, DNRP is:

- improving facilities which convey and treat wastewater
- partnering with other jurisdictions to promote stewardship of land and water
- reaching out to land owners and land managers with technical assistance and education

To increase utilization of parks and trails, DNRP is:

- Expanding and improving the Regional Trail System
- Partnering with community organizations to expand and improve facilities for passive and active recreation
- Improve maintenance levels at existing park facilities

What you can do

- Minimize your impact to surface waters by driving less, cleaning up pet waste, and improving yard care practices.
- Reduce toxic burdens through environmentally-preferable purchasing decisions, eating lower on the food chain, nd reducing your exposure to house dust and other environmental contaminants.
- Protect groundwater through water conservation and improving yard care and land management practices.

More information about King County's Health & Safety indicators is available by continuing to these indicators:

- Access to Clean & Safe Surface Water
- Utilization of Parks & Trails
- Reduced Toxic Burdens in Children / Vulnerable Populations
- Access to Potable Groundwater

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EPA: Lower Duwamish Watershed

Updated: August 18, 2009

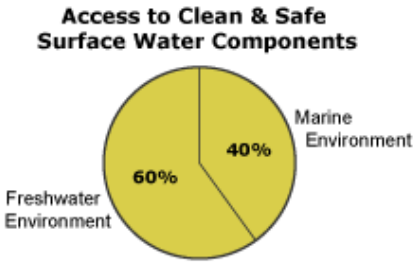
ACCESS TO CLEAN AND SAFE SURFACE WATER

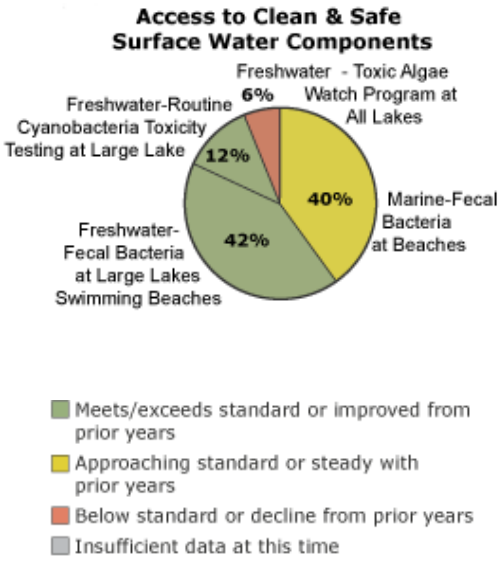
2008 Rating: ⇔

About this indicator: King County's Access to Clean and Safe Surface Water Index includes information about the conditions of water quality at freshwater and marine environments. Our weighting system applies 60% of freshwater environment and 40% percent of marine environment results toward the overall index. Within the Freshwater Environment Index (lakes only), our weighting system applies 70 percent of fecal bacteria at large lake swimming beaches, 20 percent of cyanobacteria in large lakes, and 10 percent of toxic algae watch program in lakes towards the index. Within the Marine Environment Index, our weighting system applies 100 percent of fecal bacteria at marine beaches towards the index.

Status: Overall, conditions were approaching near-standard, with a few areas of lesser concern (toxic algal blooms) and other areas of more concern (fecal bacteria at marine swimming beaches).

Influencing factors: Fecal coliform bacteria can enter lakes, streams and Puget Sound from untreated wastewater effluent, household or farm animals, wildlife, storm water runoff, sewage overflows or failing septic systems. Increased temperatures due to regional climate changes, coupled with increased watershed development and nutrients, may lead to increased cyanobacteria blooms and possible toxin production. Cyanobacteria populations are known to increase with increased nutrients in the lake.





What you can do:

- Properly dispose of or manage pet and livestock wastes.
- Minimize the use of fertilizers and pesticides by practicing natural yard care.
- Wash your car on the grass or gravel instead of on the street or driveway, or take it to a car wash.
- Report algal blooms on lakes.

More information about King County's Access to Clean and Safe Surface Water is available by continuing below for these measures:

- Fecal Bacteria at Large Lakes Swimming Beaches
- Routine Cyanobacteria Toxicity Testing at Large Lakes
- Toxic Algae Watch Program at all Lakes

WHAT CAN YOU DO?

At Home

- Shoreline Practices for a Healthy Lake, River or Stream
- Embrace Natural Yard Care
- Home & garden hints for healthy streams & salmon
- Duwamish River Cleanup Coalition

At Work

- Reduce your runoff, get a fee discount
- Learn Best Practices to reduce Stormwater Pollution
- Erosion Control for Construction Sites
- Apply Integrated Pest Management in your landscaping

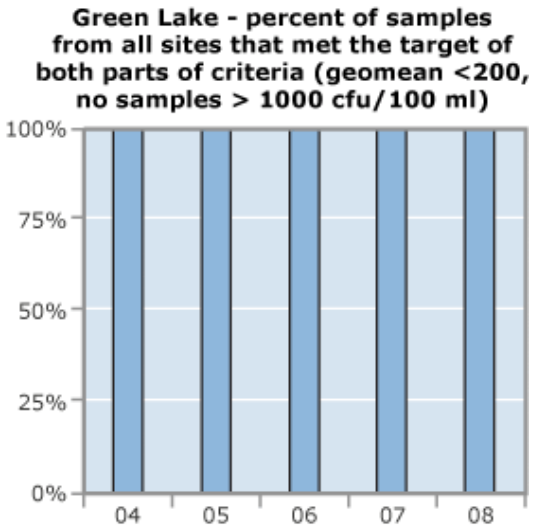
Related Information

- King County Watersheds
- Salmon and Trout Topics
- Shoreline Master Program
- Streams Water Quality Monitoring Data
- Groundwater data
- Normative Flow Studies
- Interactive Hydrography Map

- Fecal Bacteria at Marine Beaches

Fecal Bacteria at Large Lakes Swimming Beaches

About this indicator: When fecal coliform bacteria are found in lake waters it indicates a higher probability that the water has been contaminated with fecal material from humans, birds or other animals. Although fecal coliform bacteria themselves are usually not harmful, they often occur with other disease-causing bacteria so their presence indicates the potential for pathogens to be present that are a risk to human health.

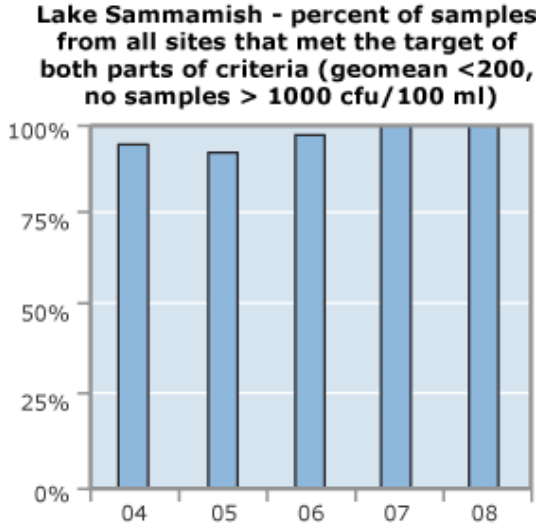


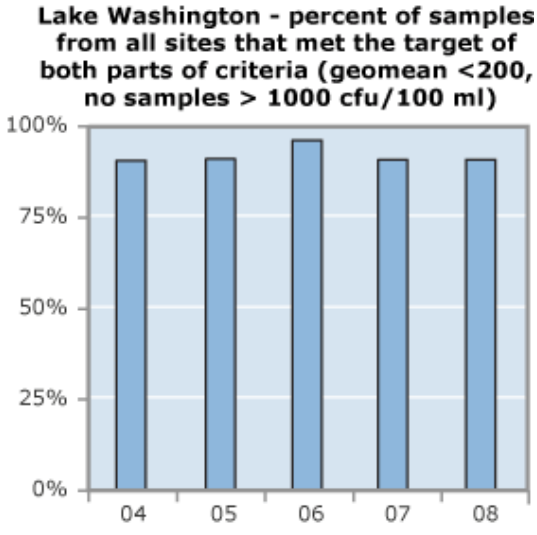
Status: High bacterial counts at several beaches monitored in Lake Washington (Juanita, Magnusson Off Leash Park, Gene Coulon, and Meydenbauer) during the 2007 summer season resulted in swimming beach closures. Bacteria levels were low in Green Lake for the fifth year in a row while Lake Sammamish remained fairly consistent, with slight variability from year to year. The 2008 target and long-term outcome for swimming beaches on large lakes is that none of the testing sites violate both parts of the Washington Department of Health fecal coliform bacteria target which is a geometric mean of 200 colonies per 100 ml with no single sample exceeding 1000 colonies per100 ml.

Influencing factors: Fecal coliform bacteria can enter lakes from untreated wastewater effluent, household or farm animals, wildlife, storm water runoff, sewage overflows or failing septic systems. The most impacted beaches are adjacent to streams draining urbanized watersheds.

Existing DNRP response: King County routinely monitors swimming beaches from mid-May through mid-September to determine levels of bacterial pollution and works with Public Health Seattle & King County to estimate relative human health risks. If bacterial counts at swimming beach testing sites have a geomean greater than 200 colonies per 100 ml of water or have a single sample greater than 1000 colonies per 100 ml, the beach will be temporarily closed.

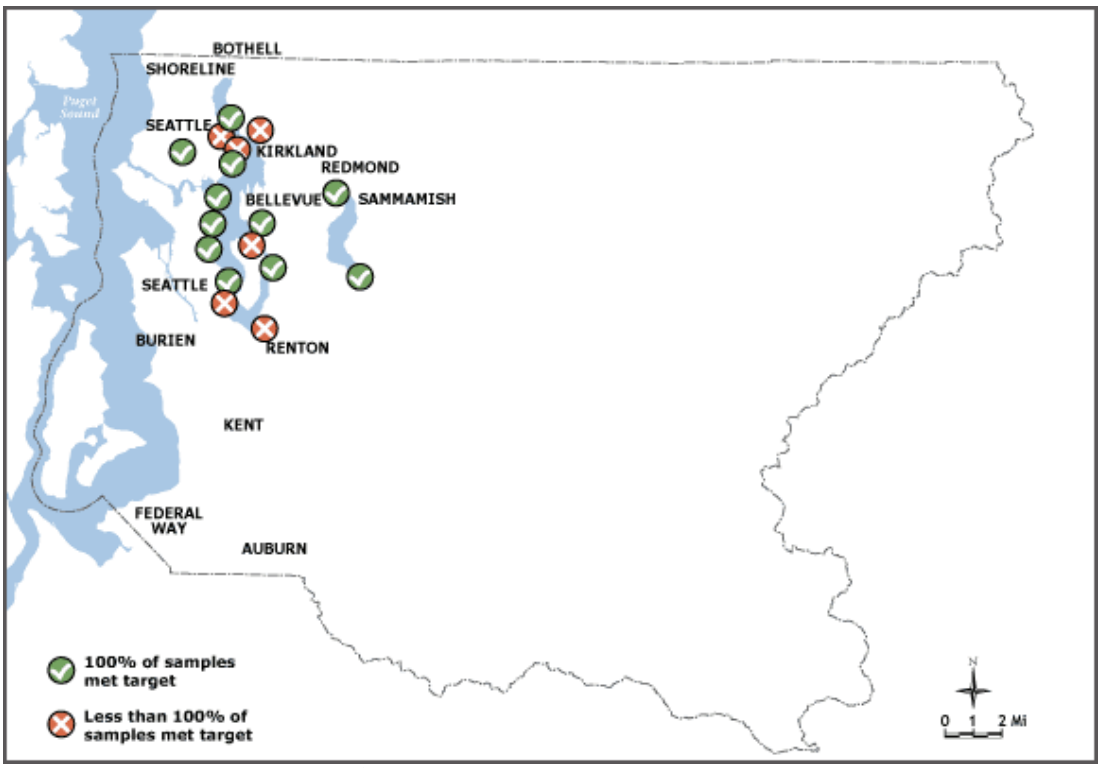
Priority new actions: Identification and correction of sewer leaks, changes to park maintenance procedures and control of non-migratory, non-native waterfowl should reduce bacteria contributed from waterfowl and improve the water quality at large lake swimming beaches. Efforts to identify and correct bacterial source in the urban streams that discharge adjacent to swimming beaches will continue. An intensive bacteria monitoring survey effort took place in the Juanita Creek basin in 2008 as a joint effort between King County DNRP, the City of Kirkland, and the Washington State Department of Ecology. A TMDL for bacteria in Thornton Creek has been started.





Shoreline Master Plan Updated

Lower Duwamish Watershed



Fecal Bacteria at Large Lakes Swimming Beaches
2008 Findings
Click to download the PDF version.

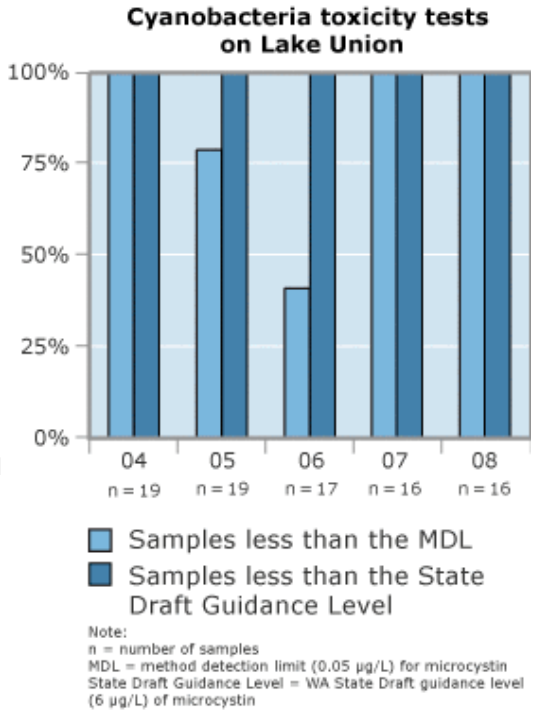
Routine Cyanobacteria Toxicity Testing in Large Lakes

About this indicator: King County wants to maintain the safety of lakes for all beneficial uses. Certain species of freshwater cyanobacteria (bluegreen "algae") are known to make toxins occasionally that are potentially harmful to mammals when ingested. Smaller-bodied animals drinking directly from affected water bodies are particularly at risk, and there are records of pet deaths in Washington State related directly to contact and ingestion of algae blooms.

Washington State standards for potential harmful levels of cyanotoxins are currently under development. A State draft guidance level of 6 µg/L for the toxin microcystin has been proposed as a warning level for possible health risks to the public from contact with lake water. Thresholds for several other known toxins are currently under study.

Beginning in 2003 the Major Lakes Monitoring Program has routinely monitored open water and swimming beaches in lakes Washington, Sammamish, and Union for the presence of the cyanotoxin microcystin. When blooms are observed they are also sampled for toxin analysis.

Our indicator applies equal weighting to all three large lakes; lakes Sammamish, Washington, and Union. This environmental indicator is represented as a percent of the total samples collected at each lake having microcystin results less than the State draft guidance level.

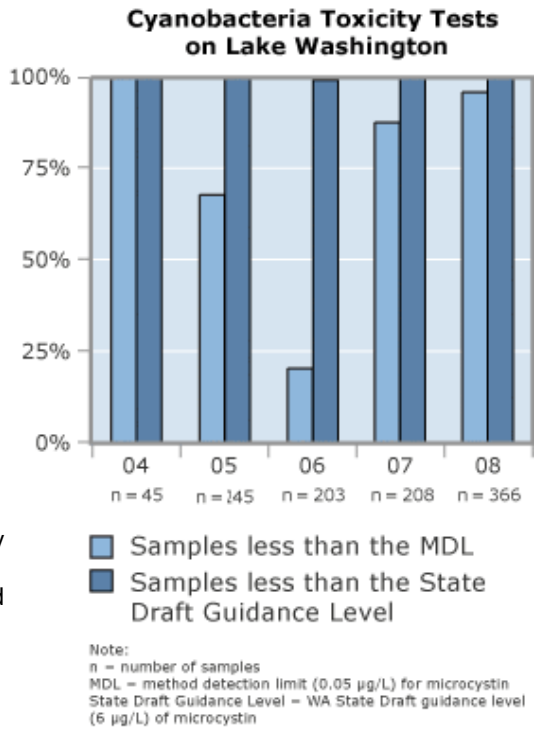


Status: Over the last six years only one sample, collected from a bloom on Lake Washington in 2006, exceeded the State draft guidance level of 6 µg/L. In 2008, all samples from lakes Washington, Sammamish and Union were below the State draft guidance level of 6 µg/L.

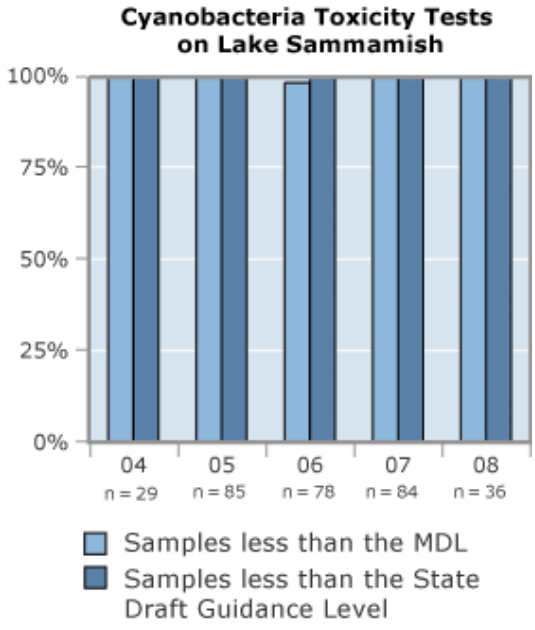
Influencing factors: Cyanobacteria blooms are more frequent in the summer and fall, although they may occur throughout the year. Increased temperatures due to regional climate changes, coupled with increased watershed development and nutrients, may lead to increased cyanobacteria blooms and possible toxin production. Cyanobacteria populations are known to increase with increased nutrients in the lake. Managing nutrient inputs into lakes may reduce the abundance of cyanobacteria and reduce the incidence of cyanobacteria toxicity.

Existing DNRP response: In 2009 swimming beaches will be monitored for cyanobacteria toxicity through the Major Lake Monitoring and Swimming Beach Monitoring programs. Any bloom determined to be above the proposed state threshold will trigger assessment of the health risk posed and possible action to post warnings or close the water body temporarily for use.

Priority new actions: Cyanobacteria toxicity monitoring in 2009 was revised due to budget cuts and mid-lake sampling was eliminated. Higher risk swimming beaches in King County will continue to be monitored on a weekly basis from March through October. In addition, continued education of the public through the County lake web pages will expand public awareness of cyanobacteria blooms and the resources available to investigate potentially toxicity. In 2009 King County Environmental Laboratory will expand it capacity to offer anatoxin screening in addition to microcystin analysis. Water bodies with repeated dangerous levels of cyanobacteria toxins will be considered for management actions to reduce their incidence if available funds can be identified.



Note:
n = number of samples
MDL = method detection limit (0.05 µg/L) for microcystin
State Draft Guidance Level = WA State Draft guidance level (6 µg/L) of microcystin



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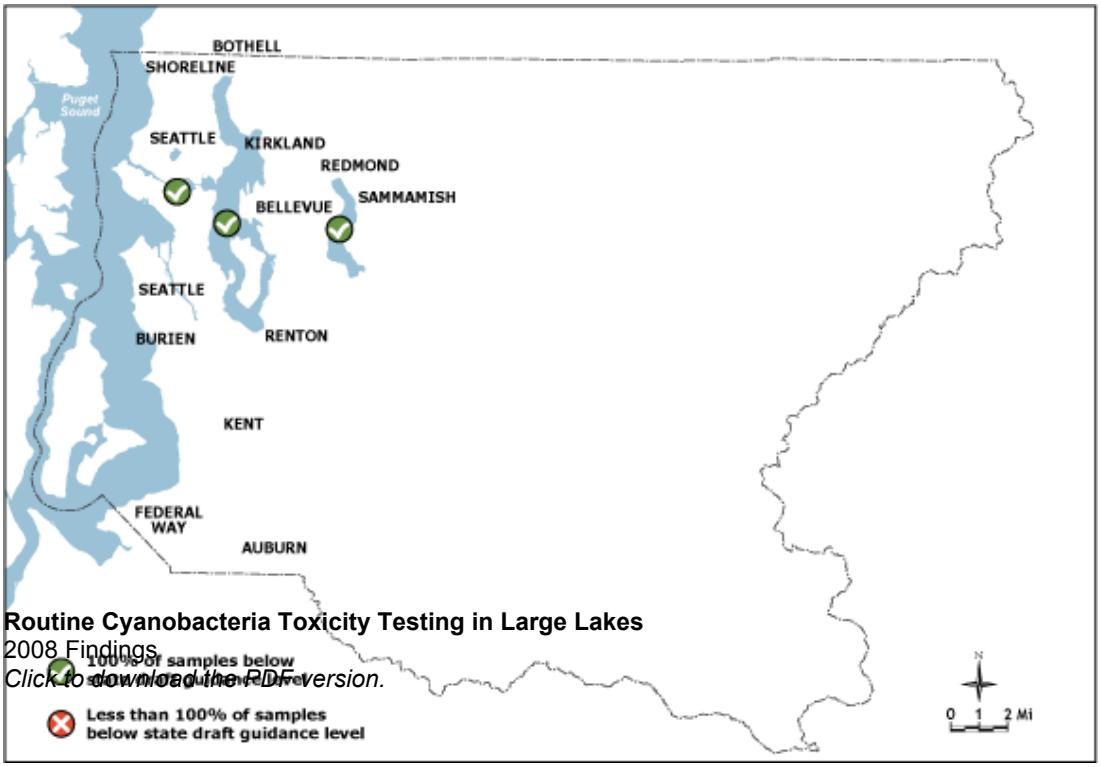
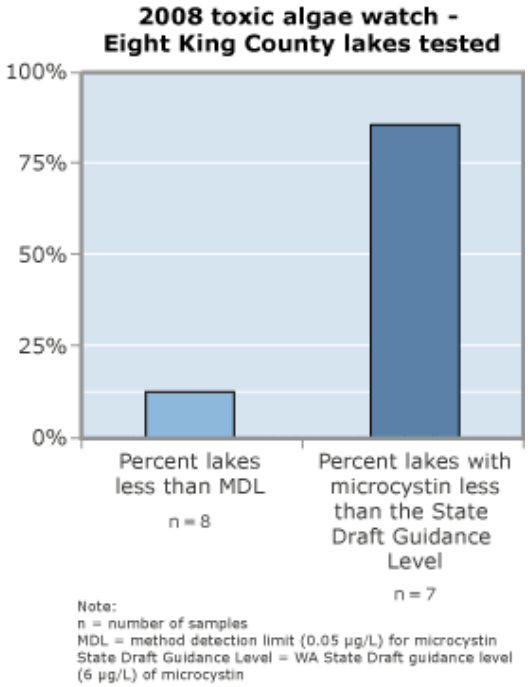


Routine Cyanobacteria Toxicity Testing in Large Lakes
2008 Findings
Click to download the PDF version.

Toxic Algae Watch at All Lakes

About this indicator: King County wants to maintain the safety of lakes for all beneficial uses. Certain species of freshwater cyanobacteria (bluegreen "algae") are known to make toxins occasionally that are potentially harmful to mammals when ingested. Smaller-bodied animals drinking directly from affected water bodies are particularly at risk, and there are records of pet deaths in Washington State related directly to contact and ingestion of algae blooms.



Washington State standards for assessing the potential for harm are currently under development. A State draft guidance level of 6 µg/L for microcystin has been adopted as a warning level for potential health risks due to contact with lake water. Thresholds for several other identified toxins are currently under study and may be proposed in the future.

In 2007 the Washington Department of Ecology began a program to assist citizens and local jurisdictions with identification of cyanobacteria blooms and to test for microcystins at the King County Environmental Lab. The King County Lake Stewardship Program participates in this program and has trained staff and lake volunteers to report and sample blooms.

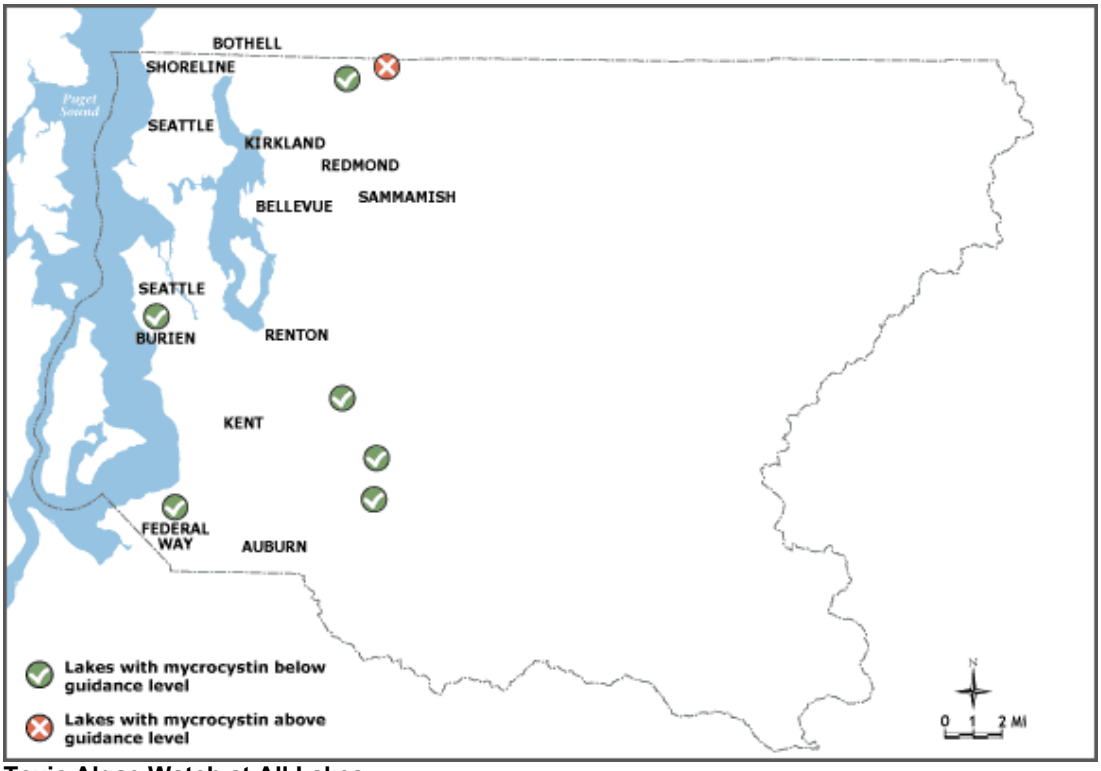
This environmental indicator includes all lakes with samples submitted for microcystin testing in 2008 and is represented as a percent of tested lakes with microcystin results less than the State draft guidance level. Samples were only collected if a potential toxic algal bloom was reported through the program. Tuck Lake was sampled multiple times for microcystin in 2008 because of a persistent toxic bloom.

Status: In 2008, at least 50 lakes (large and small) had monitoring programs with participants asked to look for algal blooms and report their presence. Of these, 8 lakes were observed to have blooms, and 24 samples were tested for microcystin, 13 of these were from one lake. Tuck Lake supported a bloom producing considerable toxicity that lasted from early September through mid December.

Influencing factors: Cyanobacteria blooms are more frequent in late summer through early winter, although they may occur at any time. Increased temperatures from regional climate changes, coupled with increased watershed development leading to higher nutrient loading to surface waters, may encourage cyanobacteria blooms with toxin production. Managing nutrient inputs into lakes can reduce the abundance of cyanobacteria and thus reduce the incidence of cyanobacterial toxicity.

Existing DNRP response: King County has established a cooperative relationship with the Department of Ecology Algae Watch Program and will continue to sample all blooms reported through the Lake Stewardship and Trouble Call programs. Any bloom determined to be above the proposed state threshold will trigger assessment of the health risk posed and, if warranted, action to post warnings or close the water body temporarily for use.

Priority new actions: Continued education of the public through the Lake Stewardship Program and the County lake web pages will expand public awareness of cyanobacteria blooms and the resources available to investigate potentially toxicity. In 2009 King County Environmental Laboratory will expand its capacity to offer screening of additional toxins. Water bodies with repeated dangerous levels of cyanobacteria toxins will be considered for management activity to reduce rate of incidence if available funds can be identified.

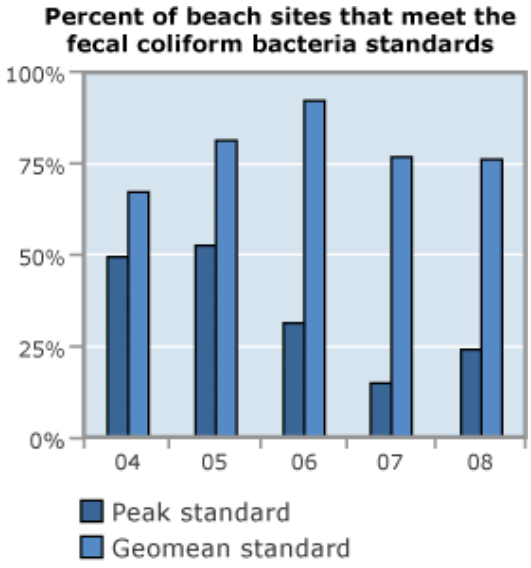


Toxic Algae Watch at All Lakes
2008 Findings
Click to download the PDF version.

Fecal Bacteria at Marine Beaches

About this indicator: Fecal coliforms are one of many groups of bacteria that indicate the presence of fecal contamination at swimming beaches. The State of Washington's water quality regulatory standards indicate that organism counts should not exceed a geometric mean value of 14 colony-forming units (CFU) per 100 ml, and not more than 10 percent of the samples used to calculate the geometric mean should exceed 43 CFU per 100 ml. These standards are known as the geo-mean standard and the peak standard, respectively, and are intended to be protective of human health in relation to primary contact recreation (e.g. swimming) and shellfish consumption.

Comparisons to both the geo-mean and peak standard are made for each beach site monitored and reported for this indicator, using fecal coliform counts from samples collected on a monthly basis from 25 stations in 2008. The geo-mean value reflects the typical fecal coliform count at a given site, while the peak value is used to determine whether pulses of high fecal coliform counts may be present at a site.

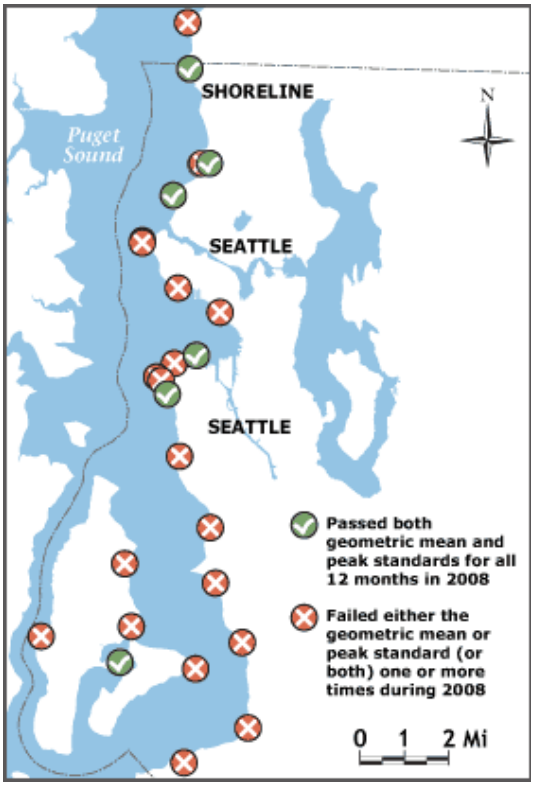


Status: During 2008, six of the 25 stations monitored (24 percent) met both the geo-mean and peak standards for all 12 sampling events. Nineteen of the 25 stations (76 percent) met the geo-mean standard for all 12 sampling events, but did not meet the peak standard one or more times. Six of the 25 stations (24 percent) did not meet either the geo-mean or peak standards one or more times. The six stations that failed both the geo-mean and peak standards were located near Edwards Point, Carkeek Park, Alki Point, Fauntleroy Cove, Normandy Park, and Redondo Beach. Stations with any type of standard failure are shown on the map by the red circled X.

Influencing factors: Fecal coliform concentrations measured at marine beach sites are highly influenced by proximity to fresh water inputs, especially during rainfall events. For example, during the August 2008 sampling event, nine out of 25 stations (36 percent) showed a peak standard exceedance. This sampling event followed a three-day rainfall event with a total precipitation of 1.3 inches. The stations that exhibited peak standard exceedances in August were all located near freshwater or storm water inputs.

Existing DNRP response: Past and on-going efforts by King County have reduced fecal contamination from most outfalls to the point that contributions from non point sources in the area are more significant than the outfalls themselves. DNRP has little control on improving current levels of fecal coliforms near most outfall sites. An exception to this is the Vashon outfall where recent improved maintenance and operations have reduced bacteria entering the environment and an upgrade to the outfall itself (moving it further out into deeper water) should further reduce fecal contamination on nearby beaches. The beach monitoring station at Gorsuch Creek on Vashon Island is near the Vashon Treatment Plant and outfall and is monitored as part of the outfall lease with the Washington State Department of Natural Resources. This monitoring station failed the geo-mean standard 3 out of 12 months and the peak standard once in 2006. This station, in 2007, passed both the geo-mean and peak standards during all 12 months. In 2008, the Gorsuch Creek station passed the geo-mean standard during all 12 months and failed the peak standard only once, during the August sampling event following a period of significant rainfall.

Priority new actions: DNRP will pursue efforts to determine sources of non-point source contributions of fecal coliforms, if data warrants. These efforts will include evaluating emerging technologies in microbial source tracking, and the continued application of fecal coliform survey projects, such as the one performed at Alki Point in 2006. DNRP will continue to monitor the 13 stations added to the beach monitoring program in 2007 to identify stations with ongoing fecal coliform standard exceedances, such as Redondo Beach. DNRP will continue to work with the State of Washington BEACH program on these trouble spots.



Fecal Bacteria at Marine Beaches
2008 Findings
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Technical Notes

For definitions and more detail.

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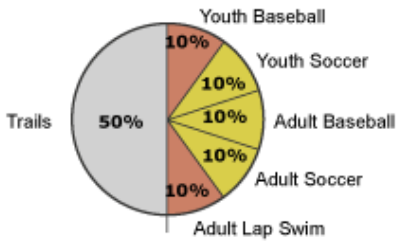
Updated: August 18, 2009

USE OF PARKS AND TRAILS

2008 Rating: ⇔

About this indicator: This is a new indicator to look at utilization trends of recreation facilities and programs. Originally conceived to analyze scheduling trends of park facilities, data provided contradictions in what is understood in recreation trends. In order to report on trends a more robust analysis is required and is queued up for 2008 that will include data from public and private facility managers, and sports leagues. This data will be analyzed with multiple demographic layers to better understand what drives upward and downward trends in utilization of recreation facilities and programs.

Utilization of Parks & Trails Components



- Meets/exceeds standard or improved from prior years
- Approaching standard or steady with prior years
- Below standard or decline from prior years
- Insufficient data at this time

Status: Initial findings reveal that baseball and swimming reservations at some park facilities in the county have declined from 2005 to 2007, while soccer as increased. However, the data collected is inadequate to make broader trend statements.

Influencing factors: Some influencing factors that resulted in a decrease in utilization include fee increases and poor facility conditions. Analyzing a fuller recreational inventory with broader list of recreational providers should allow us to address influencing factors and speak to trends with more confidence.

Existing DNRP response: Some efforts to improve the trend in utilization include converting athletic fields to lit synthetic turf, continuing to offer sports grant programs that improve facilities and directing capital resources to geographic areas where there are deficits in recreation facilities.

Priority new actions: In addition to continuing the efforts noted above, other actions to be taken to better understand and improve utilization rates will include working with cities and recreation providers such as the YMCA, and Boys and Girls Club to assess membership and identify hindrances to increased membership. This will result in a richer understanding of where resources should be spent to meet recreational needs. Both the Youth Sports Facility Grant and Community Partnerships and Grants Programs are likely solutions to meeting this need.

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At Home

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- Embrace Natural Yard Care

At Work

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- Learn Best Practices to reduce Stormwater Pollution
- Apply Integrated Pest Management in your landscaping

Related Information

- Regional trail equity information
- Lake Topics
- King County Watersheds
- Salmon and Trout Topics
- Shoreline Master Program
- Major Lake Data
- Interactive Hydrography Map
- Small Lake Monitoring Data
- Shoreline Master Plan Updated
- Lake Washington's Ecosystem

Updated: August 18, 2009

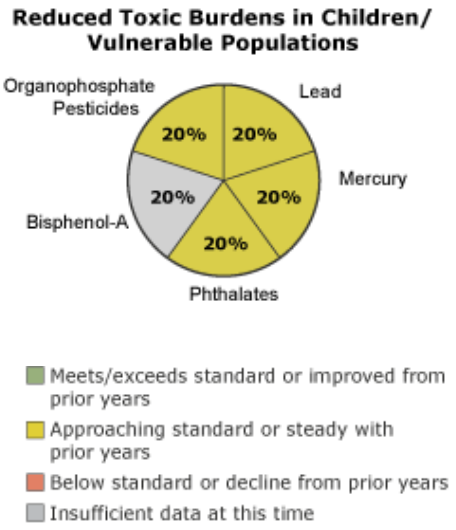
INDICATORS - 2008 ARCHIVE

REDUCED TOXIC BURDENS IN CHILDREN / VULNERABLE POPULATIONS

2008 Rating: ⇔

About this indicator: As a place-holder until such time as local data are available, this indicator is derived from 5 high-risk chemicals measured in the U.S. population by the Centers for Disease Control. "NHANES" data are extracted for the following key chemicals, for which we have reduction efforts underway or being initiated in the King County area:

- Lead
- Mercury
- Phthalate plasticizers
- Bisphenol-A
- Organophosphate pesticides



Equal weighting is given at this time. Subsequent enhancements could be derived from the Washington State Department of Health's "Washington Environmental Public Health Tracking Network," currently under development, which will report local data on lead in children and adults, organophosphate and carbamate pesticides in exposed workers, and other chemicals in the future.

Status: Little data specific to King County forces us, at this time, to look to national and state data as place holders.

Influencing factors: Exposures to hazardous chemicals come from a wide variety of sources, starting in the womb from mothers' own body burdens, to foods, food containers, dust, old paint, carpets and many other products and materials. It is a very complex area, yet one we should be concerned about when we see elevated chemical levels in tests of blood, urine, bone or other tissues. Even in the face of scientific uncertainty, it behooves us to reduce such body burdens of known problem chemicals to the extent possible.

Existing DNRP response: Complementary with King County's extensive work on reduction of hazardous chemicals in the environment, we are concerned about exposures of our population to chemicals that are known to cause health and well-being problems, such as lead, mercury and other priority toxins. In particular, Public Health efforts have focused on elevated blood lead in children. Local Hazardous Waste Management Program priorities include lead, mercury, bisphenol-A, and certain pesticides including the organophosphates. In addition to finding ways for individuals to reduce their and their children's exposures, efforts include policy changes at the local and state level to eliminate these chemicals in new products and to safely remove older materials.

Priority new actions: Initiatives in the state legislature have aimed at further reductions in mercury-containing products, and establishment of a manufacturer-funded product stewardship system for the safe take-back of mercury-containing products at the end of their useful lives. Work continues to address the chronic exposure to lead in old paint and the dust in older homes, including pending federal guidelines that would further enhance work done by any remodeling or other disturbance that might release more lead from old paint into the home environment. The extent of lead exposures from

WHAT CAN YOU DO?

At Home

- Properly dispose of Household Hazardous Waste
- Check for and repair failed septic systems
- Install Rain Barrels at home

At Work

- Properly dispose of Hazardous Waste
- Water irrigation
- Don't Flush the Planet
- Saving Water

Related Information

- Take-it-Back stores equity information
- King County Watersheds
- King County Groundwater Management
- Interactive Groundwater Map
- A Survey of Ditches on County Roads For Their Potential to Affect Storm Runoff Water Quality
- On-Site Runoff Mitigation with Rooftop Rainwater Collection and Use
- Agricultural Waterways in King County

other sources such as ceramic glazes and candies is being explored. Lead and phthalates in toys and other products widely used by children are addressed in legislation pending in the Washington Legislature. Research is underway to better understand exposures to bisphenol-A, an estrogenic chemical found to leach out of polycarbonate plastics and other resins. Efforts to reduce and/or eliminate remaining uses of organophosphate pesticides continue.

What you can do:

- Choose products that do not contain these hazardous chemicals, where possible.
- If living in a home built or painted before the late 1970s, reduce exposure to dusts.
- Seek certified contractors to assist with removal of lead paint when doing any reconstruction or when dealing with peeling surfaces.
- Follow Integrated Pest Management and Natural Yard Care practices to minimize pesticide use.
- Safely dispose of old household hazardous wastes through local collection services.
- Contact your elected officials and express how important reduction of exposure to high-hazard chemicals is, especially to young children.

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Environmental Limitations to Vegetation Establishment and Growth in Vegetated Stormwater Biofilters

Updated: August 18, 2009

INDICATORS - 2008 ARCHIVE

ACCESS TO POTABLE GROUNDWATER

2008 Rating: ⇔

Nitrates in Groundwater on Vashon-Maury Islands

About this indicator: King County has been tracking groundwater quality on Vashon-Maury Island since 2001. Nitrate is used to track groundwater quality because it is a good indicator of changes caused by human activities, such as land-use development. King County's goal is to ensure high water quality through effective land-use and on-site septic regulations.

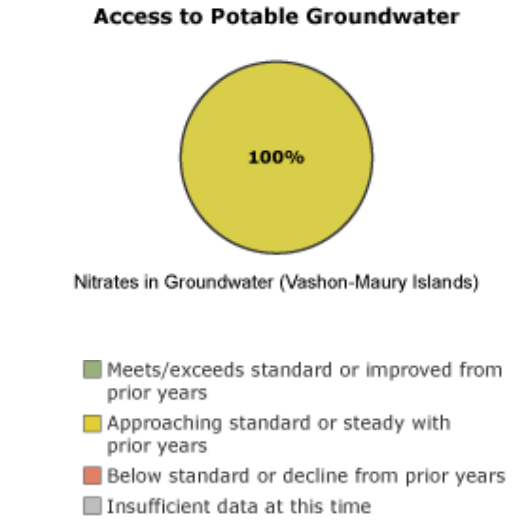
The groundwater quality indicator uses a nitrate index, defined as the maximum concentration of the annual sampling results divided by the maximum contaminant level (MCL) of Nitrate (10 mg/L). This method yields one number. The closer this index gets to 1 (or over 1) the greater concern. The nitrate index has been less than 0.5 since 2003.

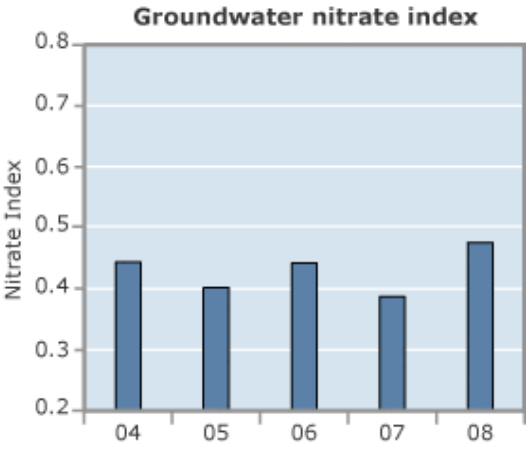
Status: Of the 19 well/spring sites monitored, all have tested below the drinking water standard (Maximum Contaminant Level, MCL of 10 mg/L) and all have less than 5 mg per liter of nitrate present. Less than half the sites tested have seen above average nitrate increases since testing began.

Influencing factors: Poor drainage systems, improperly maintained septic systems and improper fertilizer use can increase nitrate levels.

Existing DNRP response: King County plans to continue monitoring Vashon's wells and springs annually for nitrate concentrations.

Priority new actions: Additional locations have been sought to increase our understanding of island aquifers. King County intends to produce Vashon-Maury Island-wide water table, contour maps with seasonal variability that will be reported every year.





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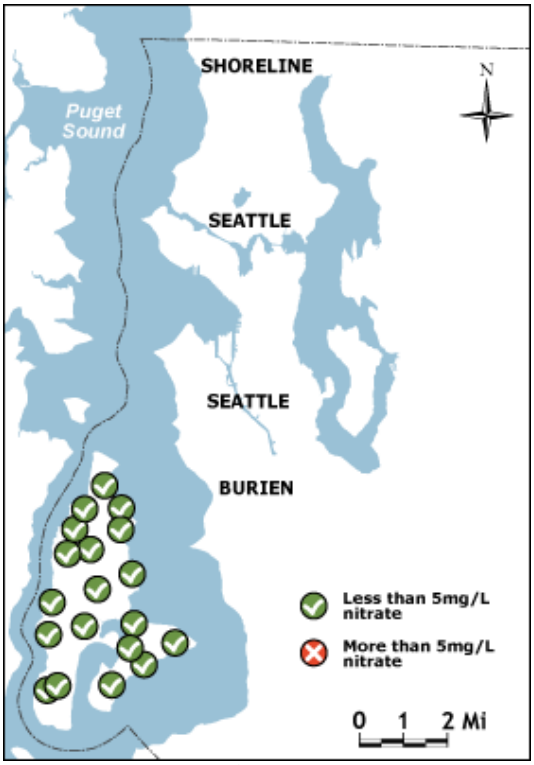
- On-Site Runoff Mitigation with Rooftop Rainwater Collection and Use
- Agricultural Waterways in King County
- Environmental Limitations to Vegetation



Access To Potable Groundwater
2008 Findings
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Technical Notes

For definitions and more detail.

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Establishment and Growth in Vegetated Stormwater Biofilters

Updated: August 18, 2009

INDICATORS - 2008 ARCHIVE

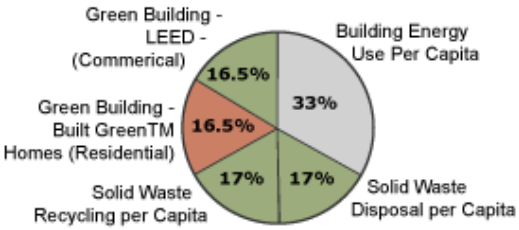
RESOURCE CONSUMPTION

About this Indicator

King County's Resource Consumption Indicator addresses trends in residential solid waste disposal and recycling and green building practices for residential and commercial development. In the future, DNRP intends to include data on building energy use in King County; however we do not currently have a reliable source for this data.

2008 Rating

Resource Consumption Components



- Meets/exceeds standard or improved from prior years
- Approaching standard or steady with prior years
- Below standard or decline from prior years
- Insufficient data at this time

Status

Green building in the commercial sector has improved, as shown by the increased number of completed projects that have been certified as LEED buildings by the US Green Building Council. LEED stands for Leadership in Energy and Environmental Design and is a nationally recognized commercial green building rating system. Residential green building in King County is measured by the number of BuiltGreen homes completed the county. In 2007, residential green building levels fell short of expectations.

Targets as established in the King County Solid Waste Comprehensive Plan for both solid waste recycling and disposal were met in 2007.

Influencing factors

Green building and solid waste management practices are influenced by a range of economic and social factors. Solid waste disposal levels have historically increased in prosperous times. The recent downturn in the economy may have contributed to reductions in solid waste disposal levels and well as in the reduced numbers of completed BuiltGreen homes.

Market factors are also contributors to the increased numbers of LEED certified commercial buildings in King County, as market analysis has shown that demand for these buildings is increasing in this region. Increased social awareness of the environmental benefits of recycling as well as increased regulatory requirements for recycling are factors that bear on household recycling rates.

DNRP response

Affecting the building, recycling, and disposal behaviors of King County residents requires a range of strategies, from collaborations with cities and non-profit partners to direct outreach to developers and residents. The King County Solid Waste Division delivers recycling and resource conservation education and outreach programs to schools (http://your.kingcounty.gov/solidwaste/education/index.asp) and leads the county's Green Building Program, including the GreenTools website: http://your.kingcounty.gov/solidwaste/greenbuilding/

WHAT CAN YOU DO?

At Home

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- Embrace Natural Yard Care
- Home & garden hints for healthy streams & salmon

At Work

- Reduce your runoff, get a fee discount
- Learn Best Practices to reduce Stormwater Pollution
- Erosion Control for Construction Sites
- Apply Integrated Pest Management in your landscaping

Related Information

- DNRP Budget And Organization Chart
- King County Watersheds
- Salmon and Trout Topics
- Shoreline Master Program
- Streams Water Quality Monitoring Data
- Groundwater data
- Normative Flow Studies
- Interactive Hydrography Map

What you can do:

When considering building or remodeling projects

- Learn and apply green building practices

When making purchasing decisions, consider environmental impacts

- Recycle more
- Dispose of solid waste properly

More information about King County's Resource Consumption indicators is available by continuing to these indicators:

- Building Energy Use
- Solid Waste
- Green Building
    - Built GreenTM Homes (Residential) - Green Building
    - Leadership in Energy Environment (LEED) certified Buildings (Commercial) - Green Building)

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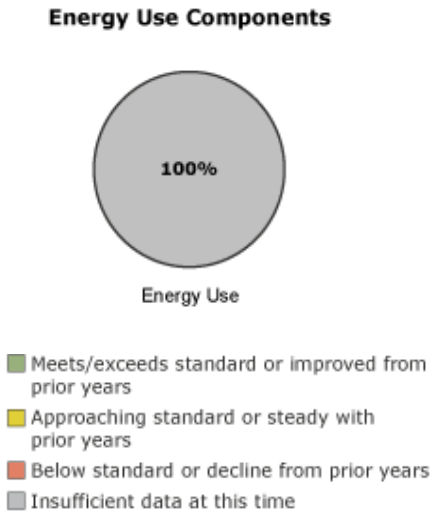
EPA: Lower Duwamish Watershed

Updated: August 18, 2009

ENERGY USE

2008 Rating:

About this indicator: This is a 'place holder' for an indicator on building energy use that is currently under development.



Because energy use can have both a large upstream and downstream ecological footprint, it is an important component of the indicator of the resource consumption patterns of King County residents. Much of our household energy use is from (relatively clean) hydro-electric sources, though natural gas is used widely for residential furnaces, hot water tanks, and generating electricity during peak load periods.

If residential building energy use increases in King County, there are upstream impacts associated with water flow in rivers and extracting fossil fuels, and downstream impacts including air and climate pollution. By achieving lower per household energy use (through increasing efficiencies of buildings and appliances), and increasing renewable energy sources, our communities consume fewer resources and have a lighter impact.

King County is not a direct energy provider, and at this time does not have a current data set that depicts residential energy use patterns and trends in King County, but is developing this indicator and maps that show variations in residential energy use by neighborhood type.

Status: Residential energy use trends in King County are not yet tracked and reported on in a coordinated manner at this time, though DNRP is exploring ways of looking at both energy consumption and sourcing trends.

Influencing factors: A range of factors (that are technical, cultural, economic and political) influence energy use levels in King County homes.

DNRP response: King County Solid Waste Division promotes and supports residential green building practices through a partnership with the Master Builders of Snohomish and King Counties and by providing education and technical assistance to homeowners and developers.

Priority new actions: King County seeks to further reduce residential energy use by promoting green building practices in single and multi-family residential construction and remodeling.

What you can do:

- If remodeling, buying or building a home, seek to achieve the energy points outlined in Built Green

Technical Notes

For definitions and more detail.

WHAT CAN YOU DO?

At Home

Home & garden hints for healthy streams & salmon

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At Work

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Related Information

Salmon and Trout Topics

Shoreline Parcel Characterization

Green-Duwamish Habitat Projects

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Updated: August 18, 2009

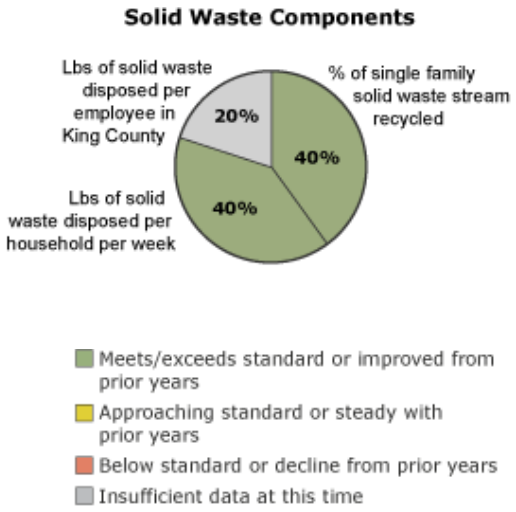
SOLID WASTE DISPOSAL

2008 Rating: ↑

About this indicator: Solid waste (garbage) disposal and recycling rates are telling indicators of resource consumption levels of King County residents. Typically, when residents are buying more consumer products, there are increased levels of garbage being sent to the landfill.

Increased levels of recycling, however, indicate fewer resources are being consumed, as these recycled materials (paper, glass, metals, organic material) remain in circulation.

2008 information about the amount of solid waste disposed per employee per week countywide will not be available until September 2009. Information from 2007 shows that the amount of waste disposed per employee was 26.4 pounds per week, higher than the target of 23.5 pounds per week stated in the county's 2001 Comprehensive Solid Waste Management Plan.



Status: Performance measures reported in the 2008 KingStat Web site include targets for single family recycling (55%) and solid waste disposal levels (26 pounds per household per week). These targets were met in 2008, indicating a generally favorable trend in improving recycling rates and reducing solid waste generation.

Influencing factors: Economic conditions have a significant influence on consumption levels and therefore solid waste disposal levels. The current, severe economic downturn has reduced the amount of consumption and, therefore, the amount of solid waste disposed.

DNRP response: In 2008, the King County Solid Waste Division (SWD) worked closely with cities and haulers to increase the availability of food scrap recycling services. The Division also continued the "Recycle More. It's Easy to Do." media campaign which resulted in increased recycling levels.

Priority new actions: King County will continue to work with cities to expand organics recycling (food scraps and food-soiled paper yard waste recycling) and is advancing food recovery from commercial sources (grocery and restaurants) to food banks or compost. SWD is improving its Web site about food scraps and other recycling and is expanding the types of items accepted for recycling at newly renovated transfer stations.

WHAT CAN YOU DO?

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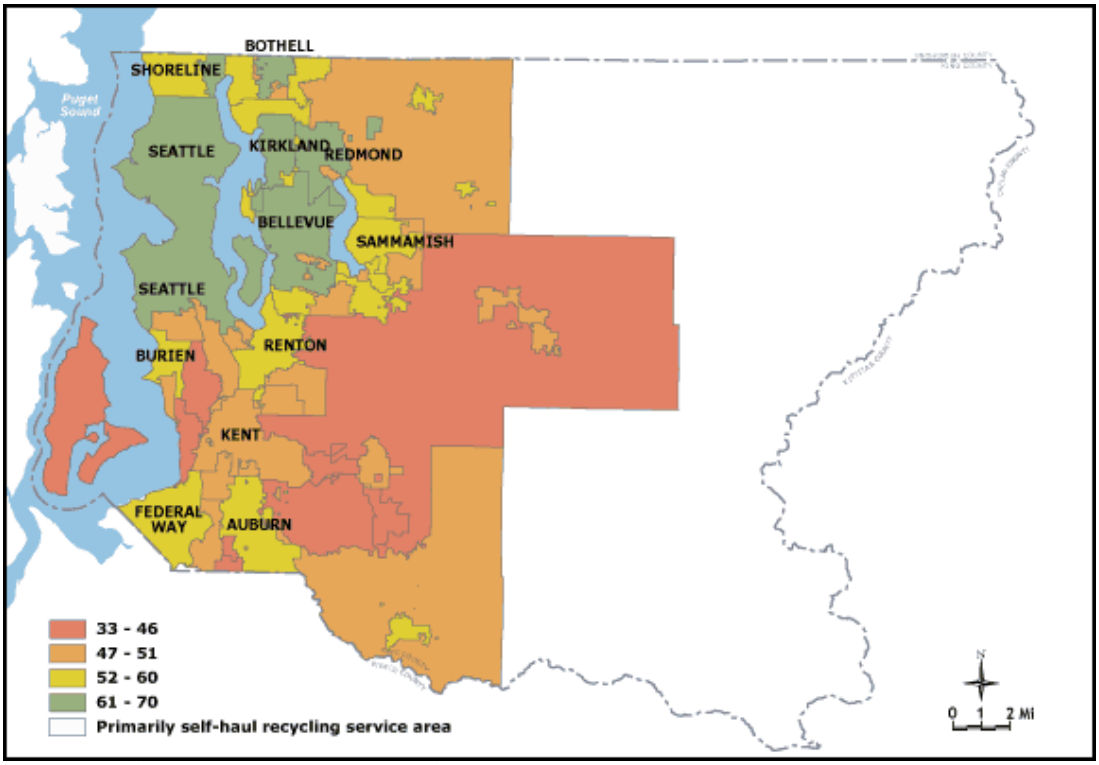
Related Information

WasteMobile Stop distribution equity information

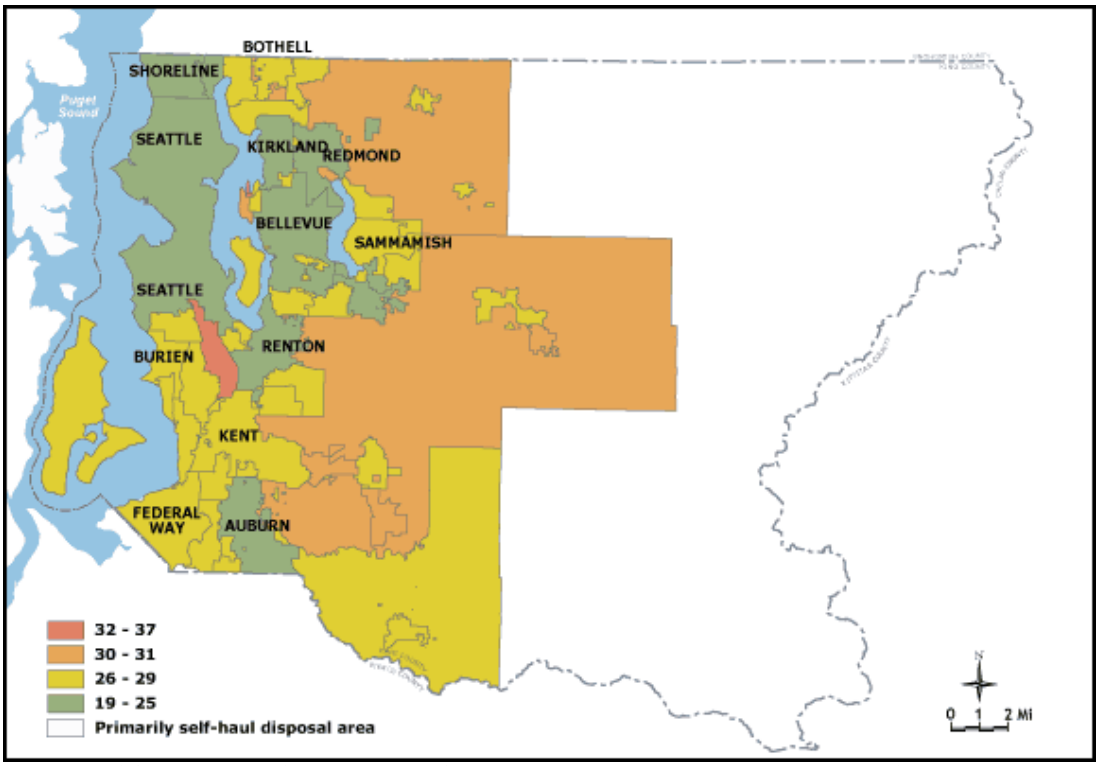
Salmon and Trout Topics

Shoreline Parcel Characterization

Green-Duwamish Habitat Projects



Percent of Single Family Household Solid Waste Recycled
2008 Information
Click to download the PDF version.



Pounds of Solid Waste Collected per Single Family Household per Week by Collection Area
2008 Information
Click to download the PDF version.

What you can do: Learn more about what you can do to reduce waste and increase recycling through the following resources.

- Garbage and recycling services
- Food waste and recycling
- Yard waste

- Electronics recycling
- Fluorescent bulb recycling
- Appliance recycling
- Textile recycling
- Recycling collection events
- Household hazardous waste collection
- the Wastemobile
- Construction recycling
- Recycling other materials/items
- On-line materials exchange
- Green building
- Eco-consumer tips

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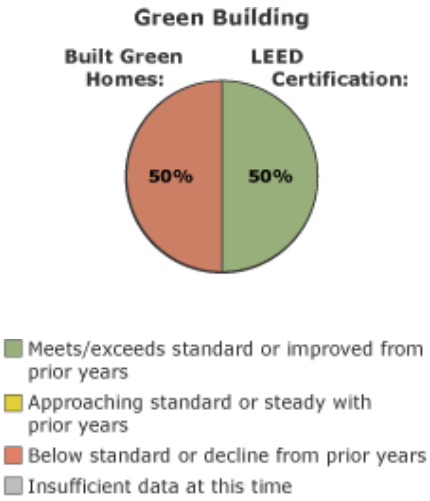
Updated: August 18, 2009

GREEN BUILDING

2008 Rating: ⇔

About this indicator: This indicator represents the number of houses and commercial buildings being built in King County that meet certain environmental standards. The standards being used are

- For Commercial buildings -- the national Leadership in Energy and Environmental Design (LEED)® rating system; and
- For residential buildings -- the local Built Green certification program.



The U.S. Green Building Council (USGBC) developed the LEED rating system to provide a benchmark for the design, construction and operation of high performance commercial green buildings. LEED recognizes performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.

The Built Green program is a partnership between the Master Builder's Association of King and Snohomish Counties, King and Snohomish Counties, and the City of Seattle. New houses and communities building to Built Green standards must meet criteria from the program's checklist, including categories in site and water, energy efficiency, indoor air quality and material selection.

Green building practices are an important indicator of the resource consumption patterns of King County residents because the construction and remodeling of buildings uses many resources and the ongoing operation of buildings continues to consume resources. Additionally, buildings may have both positive and negative ongoing environmental health impacts to building occupants.

Number of Built Green™ homes certified at the 3- to 5-Star levels in King County

About This Indicator: The Built Green program is a partnership between the Master Builder's Association of King and Snohomish Counties, King and Snohomish Counties and the City of Seattle. New houses and communities building to Built Green standards must meet criteria from the program's checklist, including categories in site and water, energy efficiency, indoor air quality and material selection.

2007 Results: 1,452.

2008 Results: 1,094.

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At Work

Volunteer for a Habitat Restoration Project

Related Information

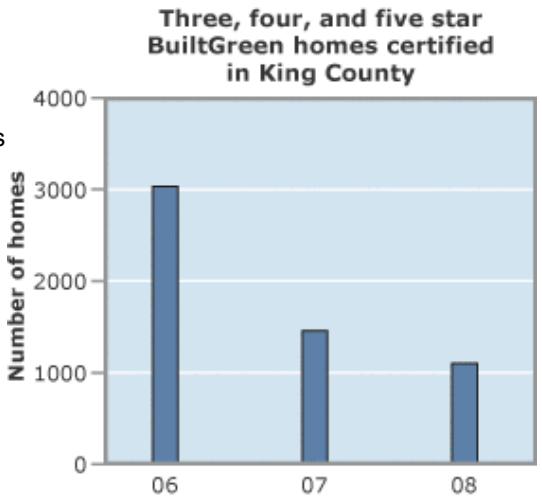
Salmon and Trout Topics

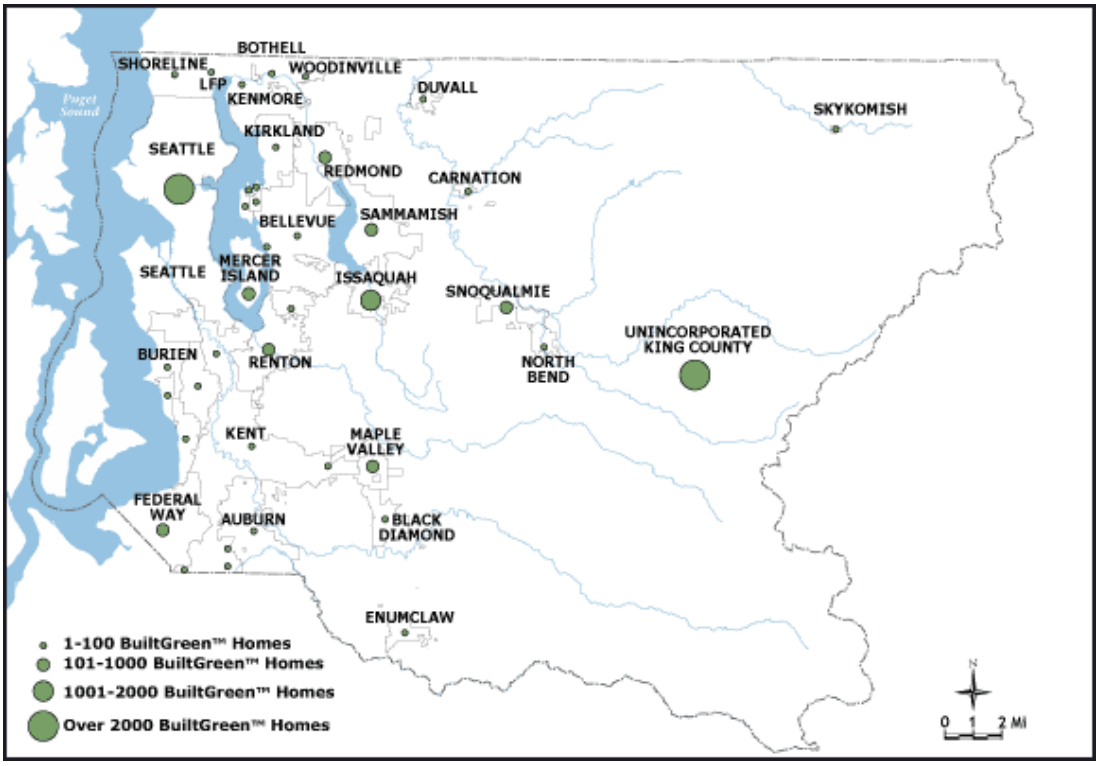
Shoreline Parcel Characterization

Green-Duwamish Habitat Projects

Influencing Factors: Due to the economic downturn in the housing market in 2007, the BuiltGreen Program experienced a reduced number of certifications. However, the overall program remains ahead of the original 2001 BuiltGreen business plan target of 10,000 houses certified by 2010.

Strategy Going Forward: The Built Green Program plans to phase out the 1- and 2-Star levels by 2010. In addition, King County and Seattle Public Utilities are implementing new grant incentives for building 4-and 5-Star homes.





Number of Built Green™ certified homes in King County 2000 - 2008
Click to download the PDF version.

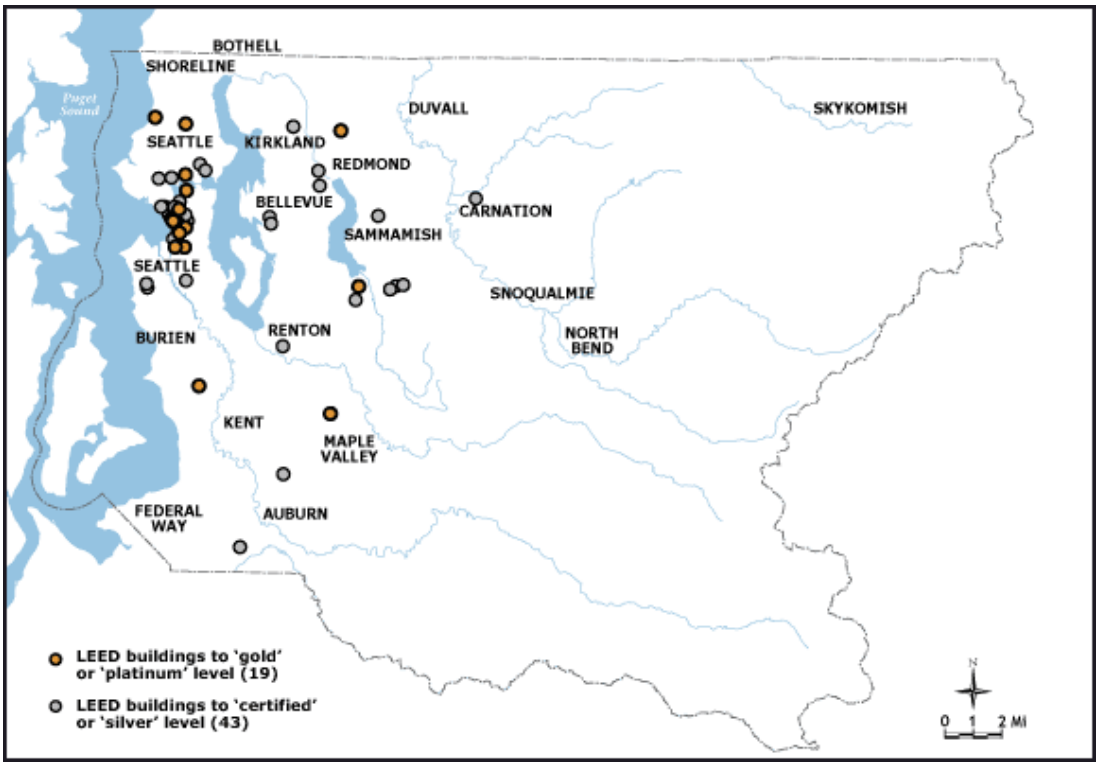
Number of buildings in King County achieving a Leadership in Energy and Environmental Design (LEED) rating

About this indicator: This indicator measures represent the number of commercial buildings being built in King County that meet the national Leadership in Energy and Environmental Design (LEED®) rating system. The U.S. Green Building Council (USGBC) developed the LEED rating system to provide a benchmark for the design, construction and operation of high performance commercial green buildings. LEED recognizes performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.

2008 Results: 14

Influencing Factors: Green building practices are influenced by incentives, technical assistance, increased consumer demand, and the increases in local companies and practitioners skilled in the design, construction and maintainance of high performing green buildings.

Strategy Going Forward: The King County GreenTools green building program offers incentives for developers to achieve LEED certification. In addition, the program offers technical assistance to support the development of more environmentally-friendly and healthy LEED buildings.



LEED Certified Buildings
2003 — 2008
Click to download the PDF version.

What you can do

As a homeowner: Learn more about purchasing a green home, green home remodeling and maintenance by following up on the following resources:

- For home energy audits
- For information about building and remodeling using green materials and practices
- For purchasing a green home

As a builder or design professional: Build your capacity for green design and construction methods by connecting to local professional organizations, such as: the Cascadia Green Building Council or the NW Eco-building Guild

Technical Notes

For definitions and more detail.

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- Adjustments to the weightings for indicators and performance measures
- Mistakes to fix

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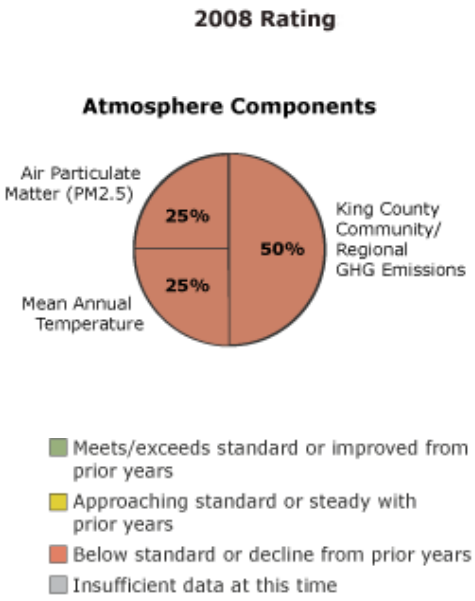
Updated: August 18, 2009

INDICATORS - 2008 ARCHIVE

ATMOSPHERE

Indicator

This atmosphere indicator considers greenhouse gas (GHG) emissions, mean annual temperature and air quality (air particulate matter (PM2.5)). The GHG emissions data is from emissions estimates completed by the Puget Sound Clean Air Agency. The GHG reduction target was established in the 2007 King County Climate Plan. The scope of the GHG measure is geographic King County — including all of the households, businesses and vehicle travel. The temperature measure shows long term trend data for mean annual air temperature at SEATAC. The air quality measure is for levels of small particulate matter in our air as sampled at monitoring sites across King County.



As you can see from the pie chart, the priority emphasis is on reduction of greenhouse gas (GHG) emissions. While fine particulate matter (PM 2.5) is our number one air quality concern to protect public health, GHG emissions causing global warming will have unprecedented environmental, social and economic impacts. In fact, global warming is fast becoming the pre-eminent issue of our time both locally and globally. The temperature indicator shows the long term trend of warming in Puget Sound.

Within King County we are expecting a 50 percent loss of snowpack within 50 years. This reduction of snow (and snow-water equivalent) will adversely affect forests, farms, fish, hydropower and drinking water availability. There will be an increase in severe weather patterns causing more intense droughts and floods. There will be an increase in human disease such as West Nile virus from increase in mosquito infestation. Forests will be increasing at risk from Pine Beetle infestation and forest fires, even in wetter Western Washington. Sea level rise will erode coastline and affect infrastructure along our coasts. These are impacts just within King County. Additional impacts across the state, the country and the globe will add addition stresses to our economy and quality of life.

More information about King County's Greenhouse Gas Emissions, Mean Annual Temperature and Air Particulate Matter (PM 2.5) is available by continuing below to these indicators:

- Green House Gas Emissions
  - GHG — King County Operational
  - GHG — DNRP
- Mean Annual Temperature
- Air Particulate Matter (PM 2.5)

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WHAT CAN YOU DO?

At Home

Use less energy more efficiently

Heat smart with wood stoves and fireplaces

Help Clean the Air Around Puget Sound

At Work

Help Employees Bus Commute

Bike Commute

Related Information

DNRP Budget And Organization Chart

King County Executive Global Warming Initiative

2005 Climate Change Conference Results

Puget Sound Clean Air Agency

Puget Sound Maritime Air Emissions Projects

Maritime Pollution in the Puget Sound

Puget Sound Maritime Air Emissions Study Results

- Mistakes to fix

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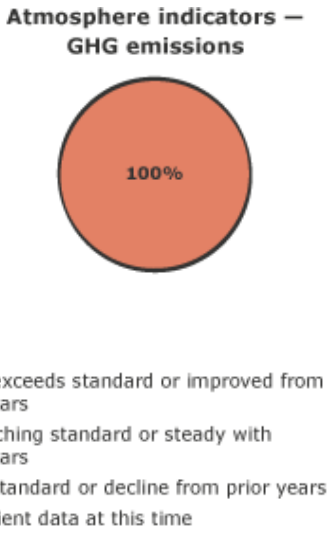
INDICATORS - 2008 ARCHIVE

GREEN HOUSE GAS EMISSIONS

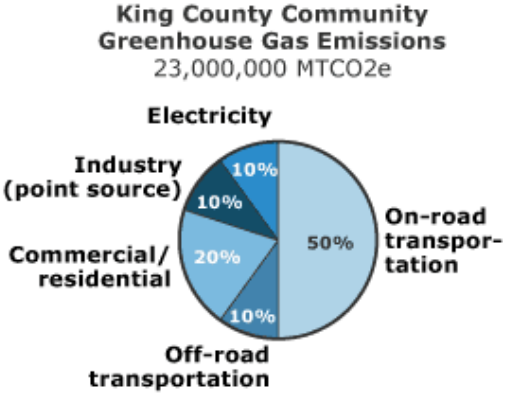
2008 Rating: ↓

GHG Emissions for all King County Residents and Businesses



About this indicator: Greenhouse gas (GHG) emissions such as carbon dioxide and methane are the primary cause of human induced climate change. The GHG emissions Atmosphere Indicator focuses on measuring progress towards reducing all types of GHG emissions from all activities within King County's geographic area. For detailed information about how King County Government is reducing emissions associated with government operations, see the KingStat Climate Protection Performance Measure.

Drivers: In King County, greenhouse gas (GHG) emissions are primarily caused by fossil fuel use (gasoline and diesel) for transportation and to a lesser but significant extent to heat our buildings (natural gas and heating oil). Combusting fossil fuel (e.g. coal) to produce electricity is also a source of GHG emissions, although in King County, because of the prevalence of hydropower, this is less of a source than in many other regions. Other important sources include methane emissions from landfills, wastewater treatment, and livestock.



Status: As of 2005, the King County region (all residents and businesses) produced approximately 22 million metric tons of carbon dioxide (CO_2) equivalents annually. This is about one quarter of Washington State's emissions and roughly 0.3% of the United States' emissions. Energy and climate mitigation efforts have slowed growth in GHG emissions, but in general they continue at unprecedented levels.

However, there are important reasons for optimism. For example, the City of Seattle (which is responsible for roughly 30% of King County's overall emissions) reported emissions in 2005 to be 8% below 1990 levels. They attribute this reduction to several factors, such as offsetting the emissions generated by Seattle City Light's electricity production through innovative emissions reduction projects. They also report that conservation efforts, in conjunction with many residential and commercial users switching from heating oil to lower carbon intensity natural gas, contributed to this progress.

Despite these successes, transportation related GHG emissions in King County continue to rise; this trend, evident in several reports, illustrates the significant challenge that King County is facing to

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- Develop Density

At Work

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- Bike Commute

Related Information

- King County Executive Global Warming Initiative
- 2005 Climate Change Conference Results
- Puget Sound Clean Air Agency
- Biodiesel Buses
- King County Global Warming Action Plan
- Green house emmisions challenge
- Northwest Natural Yard Days
- Puget Sound Clean Air Agency's climate protection information

reduce its emissions. Additionally, total energy usage in King County, as reported by Puget Sound Energy and Seattle City Light, has increased over the last several years.

GHG Reduction Goals for the King County Region:

2008 King County Comprehensive Plan

- Collaborate with other local governments, businesses, and residents in the region to reduce greenhouse gas emissions throughout the region to 80 percent below 2007 levels by 2050
- Reduce all King County government greenhouse gas emissions to 6% below 2000 levels by 2010

Washington Law, as described by ESSB 2815, effective 6/12/2008

- By 2020, reduce overall emissions of GHGs in the state to 1990 levels
- By 2035, reduce emissions to 25% below 1990 levels
- By 2050, reduce emissions to 50% below 1990 levels

Existing response: The King County Executive's Office developed the 2007 King County Climate Plan which addresses both community (regional) and corporate (organizational) GHG emissions. The actions to reduce climate pollution are aimed at using the county's four levers of change: land use, transportation, environmental management and renewable energy. The 2008 Annual Climate Report, a concise seven page summary published in February 2009, summarizes key 2008 efforts and 2009 strategies to mitigate and sequester greenhouse gas emissions and prepare for expected climate impacts. Download a PDF version of the report.

Technical Notes

For definitions and more detail.

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Updated: August 18, 2009

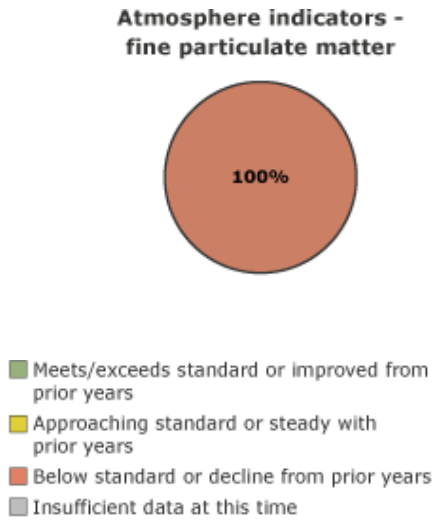
AIR QUALITY

2008 Rating: ↓

Air Particulate Matter (PM 2.5)

About this indicator: Fine particulate matter less than 2.5 micrometers in diameter (PM2.5) contributes to increased respiratory disease, decreased lung function, heart problems, and premature death. PM2.5 is a main air pollutant of concern in the Puget Sound region.

Drivers/influencing factors: The greatest contributing source to PM2.5 in the Puget Sound area is wood smoke, especially from fireplaces and woodstoves, in winter months when PM2.5 concentrations are highest. While wood smoke contributes the greatest mass of PM2.5, particulate matter from diesel engines is the most highly toxic.



Status: In 2007, readings at several King County monitoring sites exceeded the Puget Sound Clean Air Agency's PM2.5 health goal of 25 micrograms per cubic meter. Concentrations at some of these sites were not far below the federal daily standard of 35 grams per cubic meter. Measurements taken at these sites are affected by a variety of sources, including wood smoke, vehicles exhaust, industrial activity, and port operations.

Existing response: The Puget Sound Clean Air Agency has several programs designed to reduce PM2.5 emissions, including programs specifically targeted to address wood smoke. The agency enforces burn bans in winter months, when weather conditions contribute to high PM2.5 levels. The agency and its partners perform outreach and education to encourage people to use cleaner burning practices and upgrade older wood-burning stoves and fireplaces. Other programs include evaluating and expanding the areas where outdoor burning is prohibited and the agency's Diesel Solutions program, to reduce diesel engine emissions through voluntary, incentive-based projects.

Priority new actions: The Puget Sound Clean Air Agency will embark on a comprehensive review of its wood smoke programs in 2008 to determine measures that can be taken to further reduce PM2.5 emissions locally and regionally. Among other measures, this review will examine the feasibility of implementing an existing Seattle-King County ordinance requiring older, dirtier-burning woodstoves be replaced when homes in urban areas are sold. Additionally, the agency will be exploring possible funding sources to expand its efforts in diesel emissions reductions beyond public fleets.

WHAT CAN YOU DO?

At Home

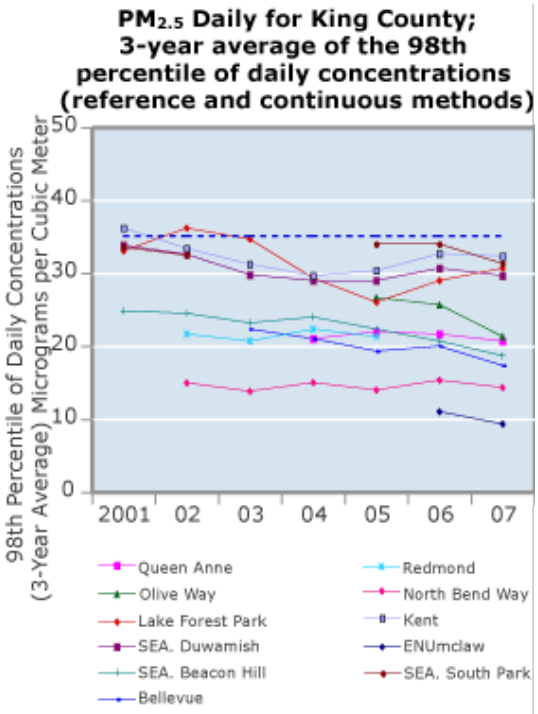
- Use less energy more efficiently
- Heat smart with wood stoves and fireplaces
- Cascade Bicycle Club
- EPA air quality frequently asked questions

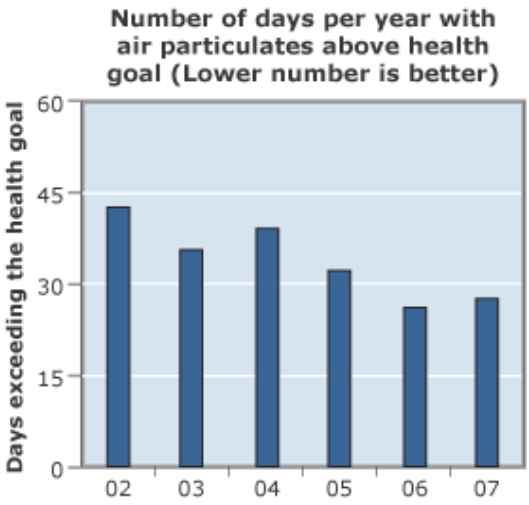
At Work

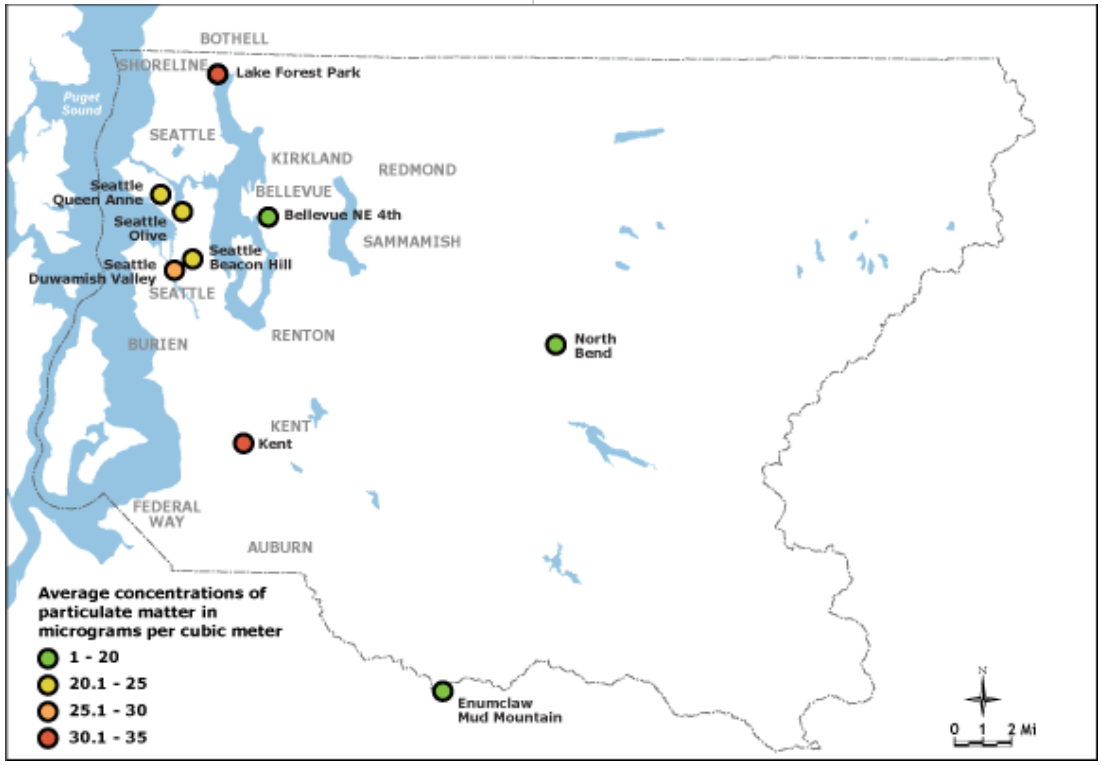
- Help Employees Bus Commute
- Bike Commute

Related Information

- Puget Sound Clean Air Agency
- General information on fine particulate matter
- Information on diesel emissions reductions
- The Puget Sound Clean Air Agency's Annual Data Summary (2005)
- How can I help clean our air?
- Information on wood smoke and health effects
- How are ports and partners reducing emissions?







Air Particulate Matter
2007 Findings
Click to download the PDF version.

Technical Notes

For definitions and more detail.

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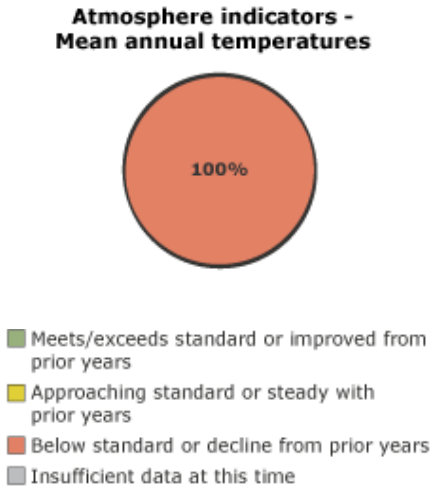
INDICATORS - 2008 ARCHIVE

TEMPERATURE

2008 Rating: ↓

Mean Annual Temperature

About this indicator: This indicator is the average of the last ten years' annual temperature in the Puget Sound lowlands as compared to the near term historical average temperature (the average from 1971 to 2000). This indicator is chosen as a rough proxy to track the impact of global warming and climate change at the regional level.



Drivers/influencing factors: Many regional climatic factors control changes in annual temperatures. For example, cyclic and natural changes in oceanic sea surface temperatures can result in persistent weather patterns such as El Nino and La Nina that can last from months to years. In King County, La Nina weather patterns, for example, usually result in cooler and wetter than average weather conditions. In addition to natural causes of climate variability, human caused climate change driven by greenhouse gas emissions (such as carbon dioxide) are a strong control on global and local climate. Because there is significant year to year natural variability in average temperature, and because this indicator is focused on measuring the human caused impact on regional climate, a 10 year average temperature is used.

Status: The ten year running average for the Puget Sound Lowlands (1999-2008) is 0.45ºF above the 1971-2000 average. Overall, five of the 10 warmest years on record for the contiguous U.S. have occurred since 1999, part of a five decade period in which mean temperatures for the contiguous U.S. have risen at a rate near 0.4ºF per decade. This data indicates that the trends observed for the region is consistent with U.S. and national trends of a warming and changing climate system.

WHAT CAN YOU DO?

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Related Information

- King County Executive Global Warming Initiative
- 2005 Climate Change Conference Results
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- King County Global Warming Action Plan
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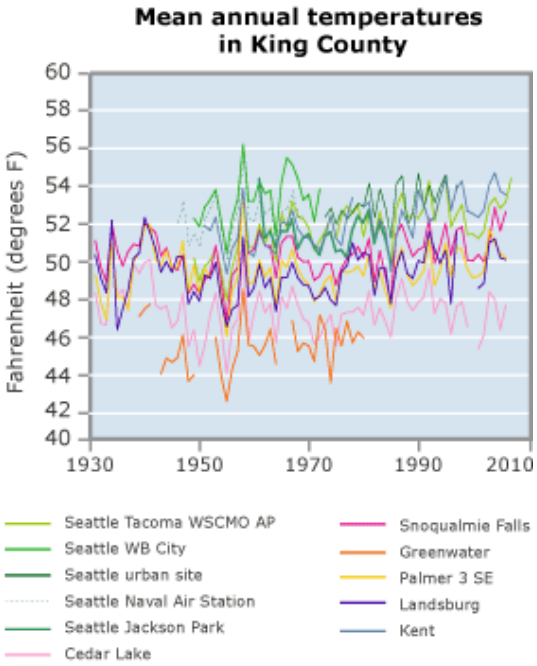

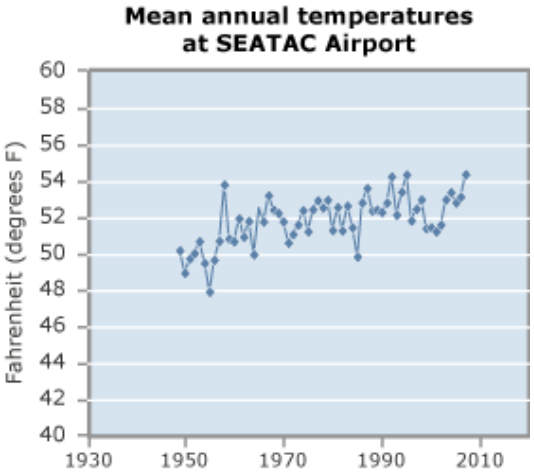

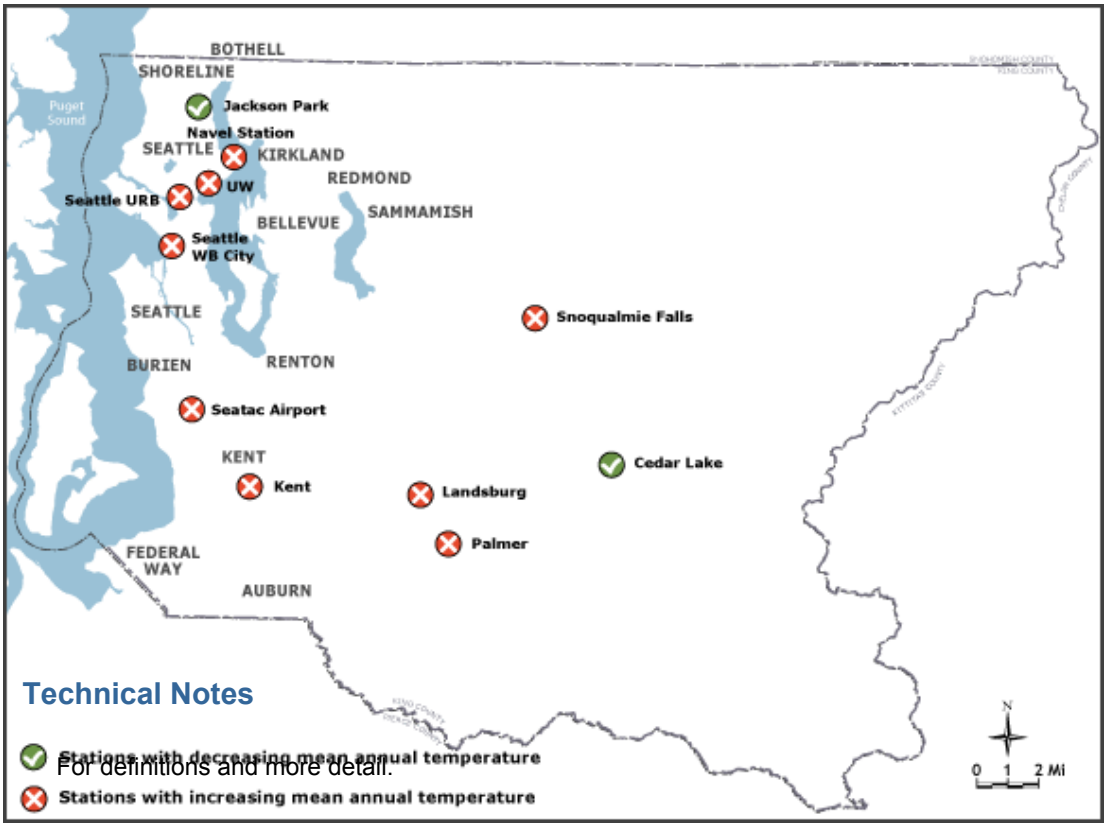

Mean annual temperature

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~~2007 Findings~~

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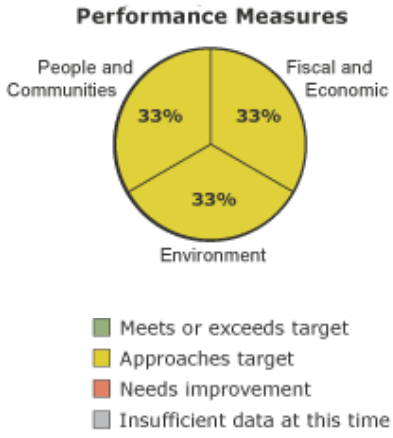
PERFORMANCE MEASURES - 2008 ARCHIVE

DNRP 2008 PERFORMANCE MEASURES

2008 Rating:

These measures present the degree that DNRP programs are achieving their stated targets. Because of the breadth of DNRP programs, the department's goals and performance measures address topics that are environmental, social and fiscal in nature.

DNRP distinguishes between environmental indicators and performance measures based on the degree of the agency's influence. Measures that have many contributing factors are included as indicators, while measures that are strongly influenced by DNRP policies, programs, and practices are considered performance measures.



Performance Measures

DNRP organizes performance measures under its three goal areas:

- Environment
- People and Communities
- Fiscal and Economic

Under each goal are four to six objectives, or roll-up measures, each of which has a pie chart for a quick summary of performance in this area. Below the summary/roll-ups are details of individual measures and, where relevant, technical notes with specific information about data sources or anomalies with the measure information.

Results on DNRP performance measures use a simple red/yellow/green/gray designation, where:

- Green signifies meeting or exceeding a stated target;
- Yellow signifies results within 10 percent of the target;
- Red signifies the need for improvement; and
- Gray signifies insufficient data at this time.

Related Information

DNRP Budget And Organization Chart

DNRP Annual Report

Natural Resource Lands

Solid Waste Recycling

DNRP 2008 PERFORMANCE MEASURES

ENVIRONMENT

- **Permit and Facility Compliance**
  - Wastewater permit compliance
  - Solid Waste facility compliance
  - Stormwater permit compliance
- **Wastewater Resource Recovery**
  - Reclaimed Water
  - Biosolids
  - Biogas
- **Land and Resource Conservation**
  - Program enrollment
  - Acres in conservation status
  - Transfer of Development Rights
  - Acquisitions
- **Solid and Hazardous Waste Management**
  - Residential disposal rates
  - Residential recycling
  - Company disposal rates
  - Hazardous waste program
- **Residential Stewardship Levels**
  - Residents' yard care behaviors
  - Residents' purchasing behaviors
- **Chinook Salmon Restoration Projects**
  - Snoqualmie
  - Cedar
  - Green
  - White

ENVIRONMENT: County Government Measures

- **Climate Response**
  - Mitigation
  - Adaptation
  - Sequestration
- **Energy Plan Implementation**
  - Renewable Energy
  - Efficiency/ Conservation
- **Green Building Achievements**
  - Dept. of Transportation
  - DNRP
  - Facilities Mgmt. Division

PEOPLE AND COMMUNITIES

- **Flood Protection**
  - National Flood Insurance Program Rating
  - Achievement of Work Program Targets
- **Regional Trail Access**
  - Percent of residents within 1.5 miles of a trail
- **Recreation Via Partnerships**
  - Structured programs
  - Unstructured activities
  - Financial matches
- **Volunteerism**
  - Parks
  - SWD
  - WLRD
- **Customer Satidfaction**
  - SWD
  - WTD
  - WLRD
  - GIS Center
- **Jurisdictional Partnerships**
  - SWD
  - WTD
  - WLRD
  - GIS Center
- **Employees**
  - Employee Safety
  - Employees ratings of workplace practices

FISCAL AND ECONOMIC

- **Rates and Fees**
  - SWD
  - WTD
  - WLRD
- **Efficiency**
  - SWD
  - WTD
  - WLRD
  - Parks
- **Capital Investment**
  - SWD
  - WTD
  - WLRD
  - Parks
- **Parks Entrepreneurial Revenue**
  - User Fees
  - Entrepreneurial/ Enterprise

PERFORMANCE MEASURES KEY

- Meets or Exceeds Target
- Approaching Target
- Needs Improvement
- Insufficient Data at this Time

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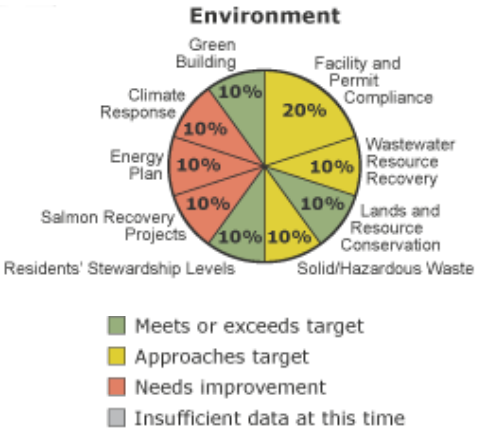
PERFORMANCE MEASURES - 2008 ARCHIVE

ENVIRONMENT

2008 Rating:

This roll-up measure summarizes the degree DNRP is achieving its **Environmental goal**:

Minimize waste and emissions, maximize resource re-use and recovery, and protect and restore habitats, ecological functions and aquatic conditions.



2008 results

DNRP's rating for the performance measures that support this goal is yellow — signifying results are within 10 percent of target for this goal.

Areas under this goal where DNRP performed well:

- Green Building Achievements
- Land and Resource Conservation
- Residents' stewardship levels.

Areas under this goal where DNRP performance approaches target:

- Permit and Facility Compliance
- Wastewater Resource Recovery
- Solid/Hazardous Waste Management
- Climate Response

Areas under this goal where DNRP performance needs improvement:

- Energy Plan
- Chinook Salmon Recovery Projects

Key influencing factors

The Elected Leadership in King County and the Water and Resources Division made great strides forward with the creation of the King County Flood Control Zone District and the adoption of a comprehensive flood risk reduction plan.

Land and resource conservation targets were hit through enhanced purchasing practices and more effective conservation outreach. Successes within the land and resource conservation measures are due in part to the relationships that rural and resource program staff have built with forest and farm landowners.

Cooperative relationships with cities and investments in new trails allow such a high percentage of residents to have easy access to King County's 175 miles of regional trails.

Strategies going forward

Related Information

DNRP Budget And Organization Chart

Brightwater Project

Interactive Stormwater Projects Map

DNRP will continue to improve processes and systems to ensure its wastewater plants, transfer stations and landfills, and the stormwater program in unincorporated King County meet or exceed regulatory requirements. DNRP will seek to increase the monitoring of the environmental conditions that our programs seek to improve, which will help ensure permit compliance.

Over the next few years, DNRP will develop and implement new ways of tracking progress on capital projects, including the use of scorecards for capital project performance, which will include address features such as energy efficiency and other sustainability issues.

With the new King County Flood Control Zone District in place, DNRP will implement its flood hazard management plan to advance both public safety goals and ecological improvements.

DNRP's land and resource conservation efforts will expand to better use all of the tools available, including public acquisition of key parcels and promotion of enhanced stewardship on private lands, plus innovative solutions such as King County's nationally acclaimed transfer of development rights program.

More information about King County's Facility/Permit Compliance, Land and Resource Conservation, Regional Trail Access, Flood Safety, and Capital Investment is available by continuing to the pages for these performance measures:

- Facility/Permit Compliance
- Wastewater Resource Recovery
- Land and Resource Conservation
- Solid/Hazardous Waste Mgt
- Residents Stewardship
- Chinook Salmon Recovery Projects
- Climate Protection
- Energy Plan Implementation
- Green Building Achievements

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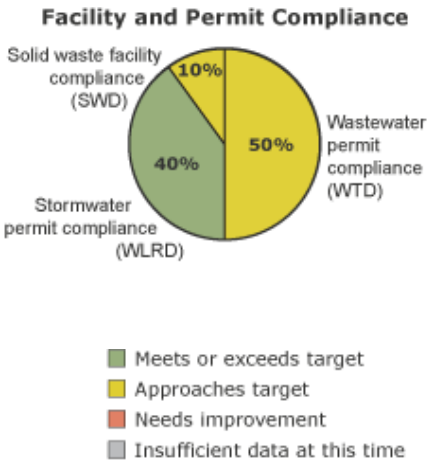
PERFORMANCE MEASURES - 2008 ARCHIVE

FACILITY/PERMIT COMPLIANCE

2008 Rating: ⇔

About this measure: This is one of DNRP's highest priority measures, as it shows how facilities and operations are performing across an array of regulated activities. Performance requirements for transfer stations, landfills, and storm and wastewater facilities are detailed, complex and critically important for protecting the health of our environment and our public health and safety.

DNRP tracks and reports on the degree regulatory requirements are met or exceeded through a variety of mechanisms, including treatment plant effluents sampling, air emissions monitoring, and on-site inspections and audits. To serve various programs, DNRP has environmental research scientists on staff and maintains an award winning water quality laboratory for analytical support.



Wastewater Treatment Division (WTD)

WTD Air Quality Permit Compliance

About this measure: This measure looks at the percentage of compliance with air quality limits and conditions as regulated via Puget Sound Clean Air Agency (PSCAA) permits and orders of approvals (OA's) on WTD's regional wastewater plants and offsite stations.

2008 Results: 97.5%

2008 Target: 100%

2009 Target: 100%

Influencing Factors: Establishing achievable conditions/limits via PSCAA permit process, quality of design and installation of chemical systems and control equipment, on-going condition of control equipment, balancing maintenance response based on level of redundancy and inventory parts, providing appropriate O&M training, clear and full understanding of all limits and operating conditions, and staying abreast of changing regulations.

Strategy going forward: WTD created an air quality compliance team to oversee and facilitate compliance issues at all WTD facilities. The AQ-compliance team will continue an active role in responding to draft permit conditions for the Brightwater Treatment Plant's air quality control equipment. An Air Quality Environmental Management System (AQ-EMS) was developed and approved by PSCAA for South Plant, to enhance the implementation of compliance, odor control, and best practices initiatives, including identifying training and safety issues. WTD will continue to evaluate modifications of equipment and operating changes to improve air quality and improve reliability of equipment operation at treatment plants. Focus in 2009 will be on South Plant waste gas burners and the reapplication for a new Notice of Construction (NOC) permit for the West Point raw

Related Information

Wastewater
- Wastewater facility distribution equity information
- Wastewater Treatment Division
- South Wastewater Treatment Plant Permit
- West Point Wastewater Treatment Plant (Modification) Permit

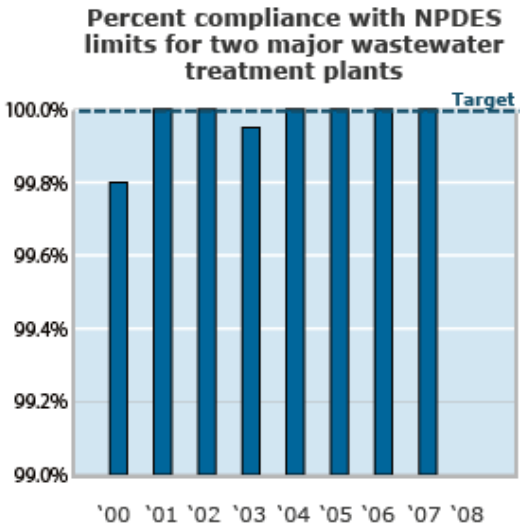
Solid Waste
- Solid Waste Division

Stormwater
- Drainage complaints equity information
- Stormwater Topics
- Interactive Stormwater Projects Map
- Ecology's link to 2007 Municipal Stormwater NPDES Permit

sewage pumps.

WTD Effluent Limit Compliance (NPDES Permits)

About this measure: This measure addresses the percentage of compliance with National Pollution Discharge Elimination System (NPDES) permit limits for the county's major regional wastewater treatment plants.



2008 Results: 100 percent. Both West Point Treatment Plant and the South Treatment Plant achieved 100% compliance with NPDES permit effluent limits in 2008.

Both treatment plants are anticipated to receive the Platinum Peak Performance Awards from the National Association of Clean Water Agencies (NACWA) for 2008.

2008 Target: 100 percent

2009 Target: 100 percent

Influencing factors: The Washington State Department of Ecology issued new NPDES permits to both plants in 2004. South Plant's limits remained the same while West Point's limits included more stringent requirements and some technical reporting changes. WTD expects to receive a new permit for West Point in the 2nd quarter of 2009. WTD is currently in the process of renewing its NPDES permit for South Plant and expects a new permit in the 3rd or 4th quarter of 2009.

Strategy going forward: All WTD sections contribute strategies to ensure success in NPDES compliance, such as: performing preventive maintenance, providing employees with training and tools, developing asset management plans for major equipment maintenance, and many other coordinated NPDES compliance efforts across the division.

Number of NPDES Permit Enforcement Actions - Treatment and Conveyance

About this measure: This measure accounts for the number of permit enforcement actions taken against WTD by the Washington Department of Ecology (WDOE) for violations of our NPDES permit related to wastewater treatment and conveyance. This includes any Notices of Violation (NOV) or fines received from Department of Ecology. NOV's or fines can result from sewage overflows, ongoing operational problems which lead to NPDES non-compliance, failure to comply with reporting requirements or other permit non-compliance issues.

2008 Results: 1

2008 Target: 0

2009 Target: 0

Influencing Factors: Approximately 6.4 million gallons of sewage flowed into a restored section of Ravenna Creek on University of Washington property south of NE 45th St. City staff noticed unusually high flows in a Seattle stormwater line during a break in a long stretch of rainy weather. Once it was discovered, County crews stopped the mistaken sewage flow immediately. The mistaken sewage flow into the creek resulted in a Notice of Violation and a fine by the Department of Ecology.

The spill Ð discovered on May 23 Ð began on May 13 when King County crews diverted a main sewer line to perform maintenance. Believing they had shifted the sewage flow to another wastewater line, the workers did not realize they had hooked into a City of Seattle stormwater line.

The complex system of sewage and stormwater pipes had been changed by a 2004 project, but the changes did not appear in the maps and manuals used by the county's maintenance staff.

Strategy going forward: The County is upgrading its procedures to ensure that a cross-connection with a storm drain will not occur again. Negotiations are underway with the City of Seattle regarding re-design of the connection system to prevent future occurrences.

Number of NPDES Construction Stormwater Permit Notices of Violation

About this measure: The Department of Ecology requires NPDES Construction Stormwater Permits

for any project that will disturb more than an acre of land by clearing, grading, excavating or stockpiling of fill material, if there is any possibility that stormwater could run off the site and into surface waters. This measure accounts for any WTD violations of its NPDES Construction Stormwater Permits.

2008 Results: 0

2008 Target: 0

2009 Target: 0

Influencing Factors: WTD strives to maintain compliance with its NPDES Construction Stormwater Permits by monitoring construction sites and ensuring that soils are properly covered or handled to prevent erosion or sediments from polluting surface waters via stormwater runoff.

Strategy going forward: WTD will continue to closely monitor construction sites and maintain protocols for prevention of stormwater pollution on all construction sites. Compliance staff will work with construction managers to respond to problems and develop mitigation strategies and site housekeeping measures to prevent uncontrolled sediment and stormwater runoff from construction sites.

Percent compliance with reclaimed water permits

About this measure: This measure looks at the percentage of compliance with reclaimed water permits at WTD's regional wastewater plants. The Department of Ecology issues reclaimed water permits to entities that generate reclaimed water. Permittees have the exclusive right to the distribution and use of the water. Permit conditions govern the location, the rate, the water quality and the purpose of use. There is currently only one active reclaimed water permit for WTD's South Treatment Plant.

2008 Results: 99.82%

2008 Target: 100%

2009 Target: 100%

Influencing Factors: King County's reclaimed water quality meets strict Class A standards set by the state departments of Health and Ecology. However, two problems can typically lead to permit exceptions, and were contributing factors to the 99.82% level of compliance in 2008. One is an operational issue, in that compliance with permit levels for turbidity and pH are strongly dependent on reliability of the control system and the on-line instrumentation. One of the exceptions at South Plant in 2008 was due to the failure of a chlorine residual analyzer. The other typical problem involves disinfection failures due to other chemicals interfering with adequate levels of bleach, or a faulty chlorine residual monitor resulting in inadequate disinfection. These can lead to exceeding the maximum daily value allowed for total Coliform forming units (cfu) in the reclaimed water.

Strategy going forward: King County invests in research and demonstration projects that support the safe and effective use of reclaimed water in our region. An assessment study is underway at South Plant, looking at ways to increase the plant's capacity for reclaimed water and improve the ability to reliably meet permit standards.

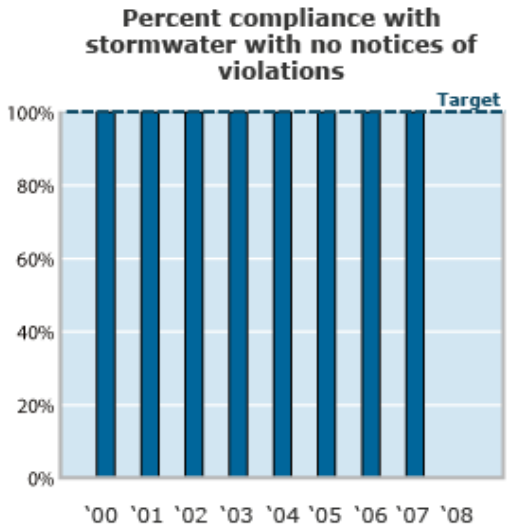
Water and Land Resources Division (WLRD)

Surface water management permit compliance (NPDES stormwater)

2008 results: 100 percent compliance

2008 target: 100 percent compliance

2009 target: 100 percent target



About this measure: The Washington State Department of Ecology is responsible for administering the National Pollutant Discharge Elimination System (NPDES) permit to ensure compliance with the federal Clean Water Act. Permit. The permit strives to address the negative impacts of surface or stormwater flows on natural resources by requiring facility maintenance, retrofit, public education and outreach and scientific sampling and analysis of the water quality of surface waters. This measure gauges compliance with eleven categories in the permit.

Influencing factors: The more developed an area becomes the faster rain or surface waters flow into creeks, streams and rivers. These surface waters carry pollutants that eventually enter water bodies like large lakes and the Puget Sound. Both increased flows and dirty water can cause damage to natural habitats, affect water temperature and its chemical composition which can negatively affect fish and wildlife populations.

Strategy going forward: New requirements called for in the 2007 permit are more stringent and compliance with many components is being held to specific timelines. This year, King County, along with 35 jurisdictions, are administering a comprehensive public outreach and education campaign. The media, web and grassroots effort will speak to how everyday actions affect the water quality of our surface and storm waters.

11 Categories of Requirements for Compliance with NPDES Permit for Municipal Surface Water Discharges

1. Legal Authority
2. MS4 / Mapping / Documentation (Outflow and location of large, mostly commercial pipes carrying stormwater)
3. Coordination
4. Public Involvement and Participation
5. Controlling Runoff from New Development, Redevelopment and Construction Site
6. Structural Stormwater Controls
7. Source Control Program for Existing Development
8. Illicit Connections/Discharges Detection and Elimination
9. Operation and Maintenance Program
10. Education and Outreach Program
11. Monitoring

Solid Waste Division (SWD)

Percent of Solid Waste facility inspections that meet or exceed regulatory requirements: health, stormwater and air quality.

2008 Weighted Results: 97.50%

2008 Weighted Target: 100%

2009 Weighted Target: 100%

Percent of Health Department inspection reports that do not result in a notice of violation for solid waste facilities.

2008 Results: 100%.

2008 Target: 100%.

2009 Target: 100%.

Influencing Factors: Good results were achieved through efficient operation and maintenance of facilities.

Strategy Going Forward: Efficient operation and maintenance will continue in 2009.

Technical Notes: Based on an estimate of the relative impacts of the three sub-measures that comprise this measure, the 2009 weighted target for this performance measure was calculated as follows. Fifty percent of the total was allotted to "Percent of Health Department inspection reports that do not result in a notice of violation for solid waste facilities", 20 percent was allotted a to "Percent of storm water inspections that meet National Pollution Discharge Elimination System (NPDES) criteria" and 30 percent was allotted to "Percent of air samples taken demonstrating that no landfill gas is released at Cedar Hills through the landfill surface."

Percent of storm water inspections that meet National Pollution Discharge Elimination System (NPDES) criteria.

2008 Results: 87.50%.

2008 Target: 100%.

2009 Target: 100%

Influencing Factors: In 2008, three inspections did not meet the criteria. This includes one inspection that should have been conducted but was not. An inspection is reported as failing to meet the criteria if a problem is identified that is not resolved by the next inspection. Some problems continued at the closed Houghton landfill regarding ballfield construction.

Strategy Going Forward: In 2009, regulatory requirements are anticipated to change, increasing inspections at the Cedar Hills Landfill and reducing inspections at closed landfills. Staff will continue to prioritize the workload to complete required inspections.

Percent of completed landfill surface emissions monitoring actions that demonstrate compliance with permit standards for landfill gas surface emissions for the Cedar Hills Regional Landfill.

2008 Results: 100%

2008 Target: 100%.

2009 Target: 100%.

Influencing Factors: Good results were achieved through efficient operation of the landfill gas system and maintenance of the landfill cover system.

Strategy Going Forward: Efficient operation and maintenance will continue in 2009.

Technical Notes

For definitions and more detail.

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Updated: August 18, 2009

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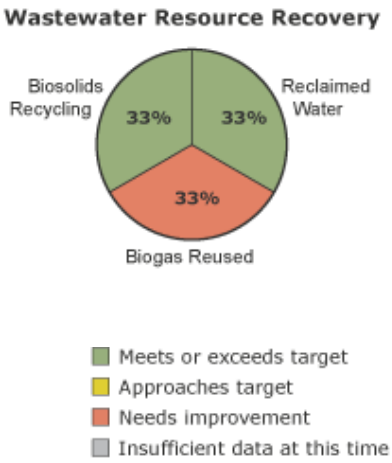
PERFORMANCE MEASURES - 2008 ARCHIVE

WASTEWATER RESOURCE RECOVERY

2008 Rating: ⇔

Wastewater Treatment Division (WTD)



Reclaimed water volumes met

About this performance measure: This measure tracks the amount of wastewater that DNRP's Wastewater Treatment Division converts into resource—reclaimed water.

2008 Results: 274.2 Million Gallons (MG)/year

2008 Target: ≥260 MG/yr

2009 Target: ≥260 MG/yr

Influencing factors: Both WTD treatment plants continue to reclaim all water needed for their own operations and any needed by customers. South Plant continued to use reclaimed water for nearly all their compatible internal process needs and irrigation demand. This accounted for about 95% of all reclaimed water used in 2008. The offsite acreage irrigated with reclaimed water in 2007 and 2008 was nearly the same.

Strategy going forward: WTD's success in converting wastewater into a resource will depend on the cost of providing treatment and conveyance for reclaimed water relative to the cost of using existing sources and/or providing new sources of surface and groundwater. WTD will be developing a regional water supply plan that will address the role of reclaimed water in meeting the region's diverse water supply needs.

Biosolids reuse targets met

About this performance measure: This measure represents WTD's ability to market and recycle biosolids, a nutrient-rich organic material produced by treating wastewater solids.

2008 Results: 100 percent

2008 Target: 100 percent

2009 Target: 100 percent

Influencing factors: Two projects at West Point Treatment Plant to improve biosolids quality and reduce digester problems are in the planning stages. These projects will help WTD maintain 100 percent reuse of biosolids. Although 100 percent of available biosolids were reused, the measure requires ongoing attention to ensure this high rate. Having reliable year-round application and storage sites will have the greatest impact on this measure.

Strategy going forward: WTD's strategy for continuing to meet the target of 100 percent biosolids reuse has several components that include:

- Ensuring availability of proven, reliable reuse sites and customers for 150 percent of biosolids

Related Information

- WTD facilities equity information
- Water Supply in King County
- WTD Reclaimed Water Program
- Biosolids

production.
- Securing a short-term emergency storage site for occasional winter use.
- Continuing an aggressive industrial pretreatment program to maintain current low metals levels.
- Maintaining an active research and demonstration program that responds to current issues and questions and evaluates potential new uses for biosolids.

Biogas Recovered for Reuse

About this performance measure: This measure represents WTD's ability to convert biogas (carbon dioxide and methane gas), which are natural byproducts of the wastewater treatment process, into heat and energy for use inside the treatment plants through a process known as cogeneration. WTD aims to capture and reuse at least 75% of available biogas for energy and heat production.

2008 Results: 65.7 percent

2008 Target: ≥75 percent

2009 Target: ≥75 percent

Influencing factors: The percentage of biogas being recycled at the two treatment plants has declined over the past four years due to aging cogeneration facilities. Construction of a new Waste-2-Energy project at West Point (2010-2011) will bring new cogeneration facilities online by 2012 that will allow greater utilization of the available digester gas.

Strategy going forward: The Waste-2-Energy project underway at the West Point Treatment Plant will harness digester gas, a renewable or "green" source of energy, as fuel for cogeneration facilities to provide heat and power at the plant. King County is committed to recovering and reusing the products of the wastewater treatment process at its regional clean-water facilities. The capability to beneficially reuse products increases the efficiency of the wastewater treatment plants, offers environmental sustainability and saves the ratepayers money.

Technical Notes

For definitions and more detail.

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Updated: August 18, 2009

PERFORMANCE MEASURES - 2008 ARCHIVE

LAND AND RESOURCE CONSERVATION

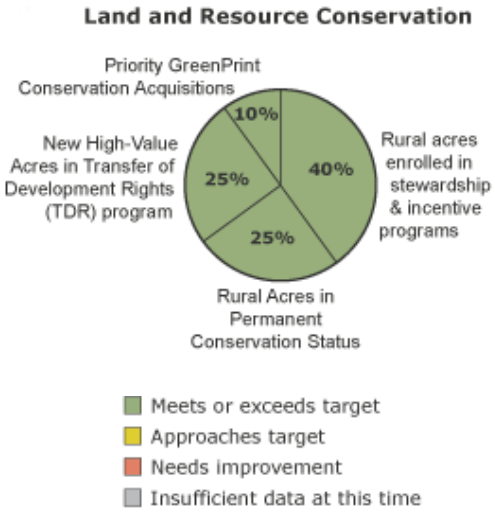
2008 Rating: ↑

Water and Land Resources Division (WLRD)

Conservation of Natural Lands

About this measure: This measure is comprised of four sub-measures, with varying weights, to provide a status report on the effectiveness of land acquisition, stewardship and incentive programs administered by the Water and Land Resources Division.

The four sub-measures, their weights, and 2008 results are:



40% New privately-owned rural acres* with stewardship plans or enrolled in incentive programs. This includes properties with farm, forest or rural stewardship plans and properties enrolled in the Public Benefit Rating System, Timber Land, Forest and Agriculture, or other Current Use Taxation programs run through the KC Assessor's office.

2008 Target: 2500 acres

2008 Results: 5001 acres (provisional data)

2009 Target: 2500 acres added

25% New public and private rural acres in permanent conservation. This includes all land in public ownership, and privately-owned lands with conservation easements.

2008 Target: 500 acres

2008 Results: 463 acres

2009 Target: 500 acres

25% The percentage of easement acres acquired in 2008 through the Transfer of Development Rights (TDR) program that score medium-high or high in at least one of four Greenprint categories: Ecological, Farm, Flood, and Forest.

2008 Target: None set

2008 Results: 71%

Related Information

- Natural Resource Lands
- Greenprint
- Water and Land Resources Division
- King County Parks & Recreation
- Interactive Parks Map
- Land Management

2009 Target: 80%

10% The percentage of 2008 non-TDR acquisitions Ð in fee or easement Ð that score medium-high or high in at least one of four Greenprint categories.

2008 Target: 80%

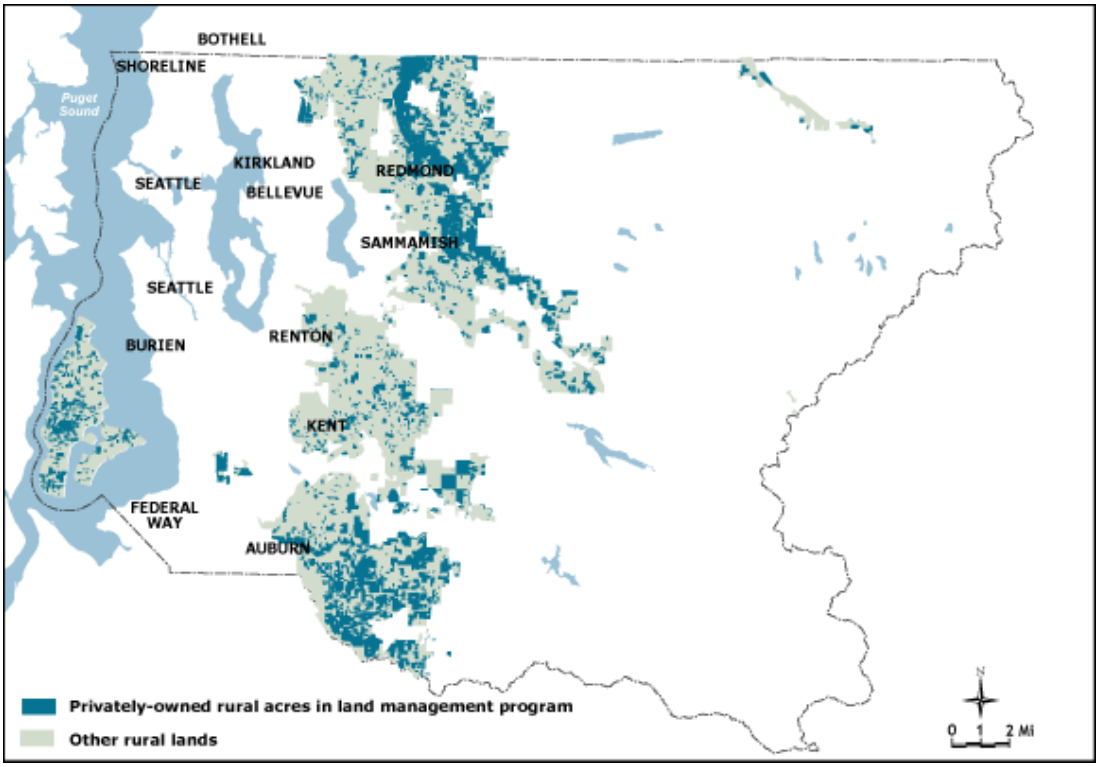
2008 Results: 90%

2009 Target: 80%

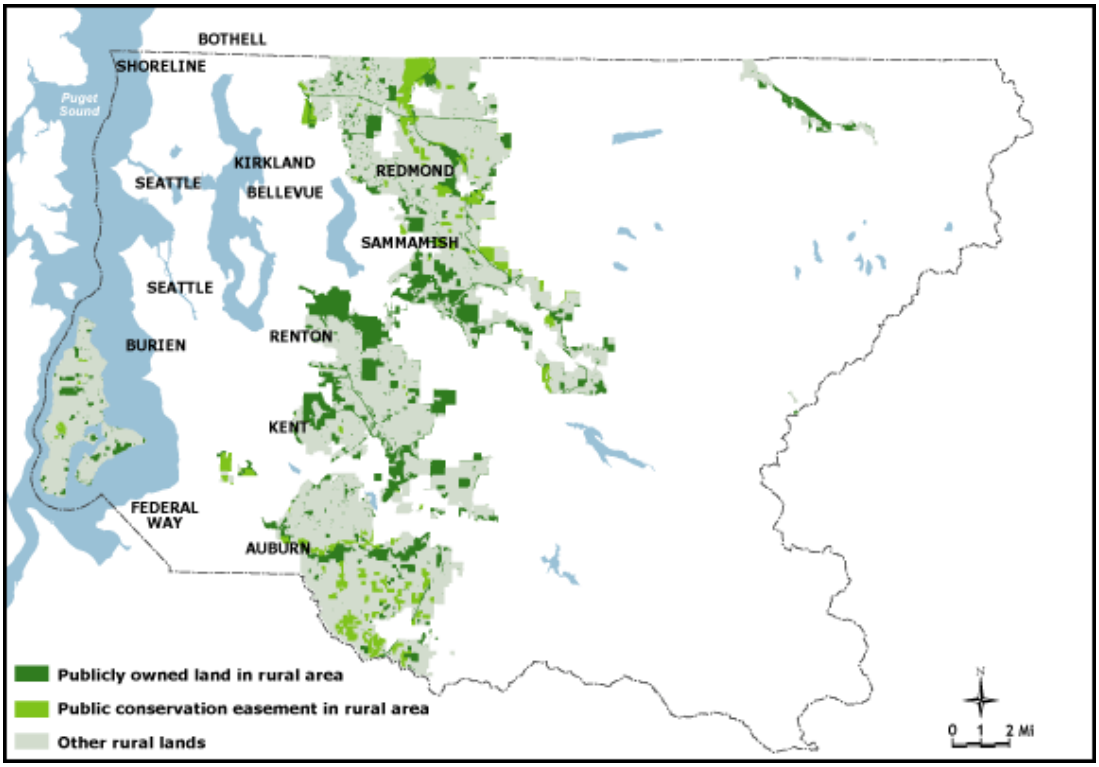
*For all of these measures, rural acres refer to all rural and agriculture zoned land, including Vashon Island and excluding the Forest Production District.

Influencing factors: Budget allocations, regulatory and policy changes, economic conditions and opportunity for acquisition all play a role in land conservation and acquisition activities. Implementing policy plans, such as salmon restoration plans, flood hazard reduction plan, or the climate change adaptation plan, often identify or call for specific land acquisition and protection and outreach and education toward improving stewardship and changing environmental behavior.

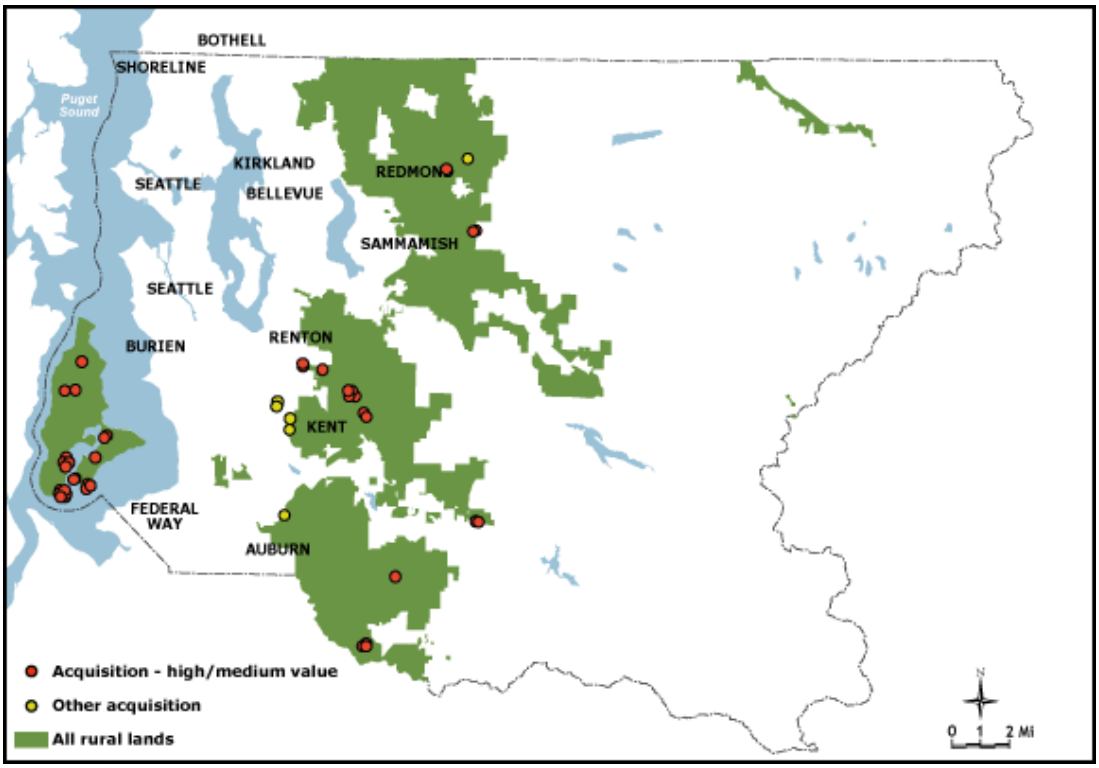
Strategy going forward: Continue to encourage stewardship and conservation on privately-owned lands through effective program delivery and strategic use of funds to acquire high priority lands that will protect environmental quality for future generations.



Rural acres in land management program
Click to download the PDF version.



Rural acres in conservation status
Click to download the PDF version.



Priority Greenprint acres acquired
Click to download the PDF version.

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PERFORMANCE MEASURES - 2008 ARCHIVE

SOLID/HAZARDOUS WASTE MANAGEMENT

2008 Rating: ⇔

Solid Waste Division (SWD)

Percent of single-family curbside solid waste stream that is recycled.

2008 Results: 55%.

2008 Target: 55%.

2009 Target: 56%.

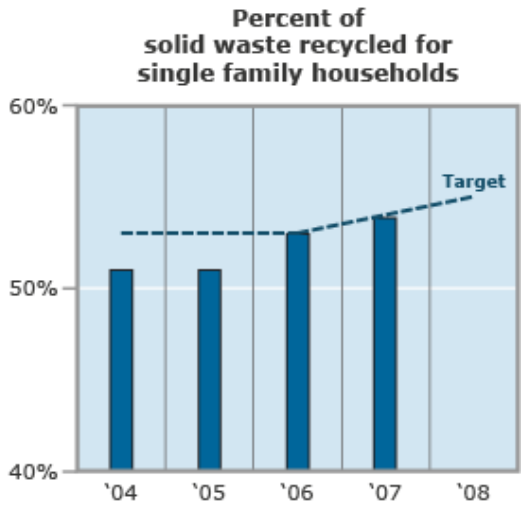
Influencing Factors: In 2008, the King County Solid Waste Division continued to work closely with cities and haulers to increase the availability of food waste recycling services. The percentage of single-family households that could recycle food scraps with yard waste collected at the curb increased from 57 percent in November 2007 to 98 percent in January 2009. The Division also continued to implement the "Recycle Food. It's Easy to Do." and the "Recycle more. It's Easy to Do." media campaigns, both of which have resulted in increased participation in recycling programs. In 2008, two additional television ads were added to the "Recycle Food. It's Easy to Do" campaign. In addition, recycling "how to" guides were distributed by commercial collection companies to over 137,000 customers - 61,000 more than in 2007.

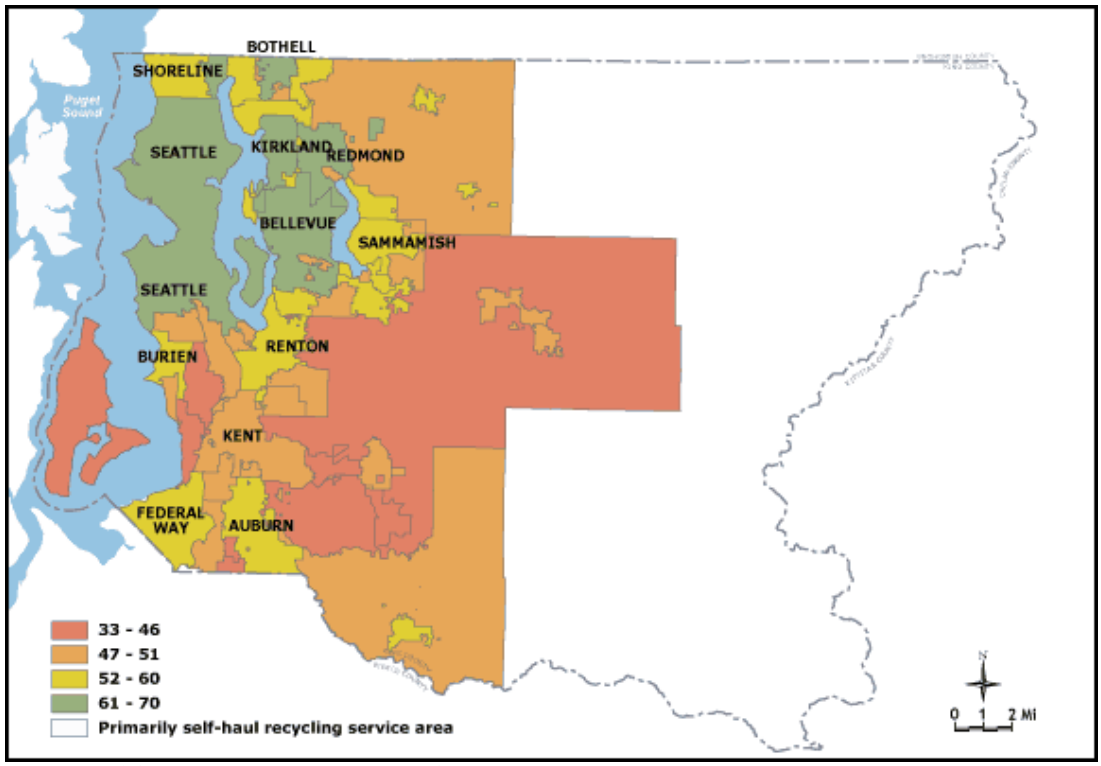
Strategy Going Forward: These efforts will continue in 2009. In addition, the "Recycle More. It's Easy to Do." campaign will specifically target areas of the county that are recycling 30 percent or less.

Technical Notes: The data is countywide except for: a) the cities of Seattle and Milton, which are not in the King County solid waste system; and b) Snoqualmie Pass and the Skykomish area, which have limited colection services.

Related Information

- Wastemobile and Take-it-Back network stores equity information
- What do I do With...?
- Solid Waste Recycling
- Garage & Yard Sales
- Household Online Materials Exchange
- Industrial Materials Exchange
- Solid Waste Business Services
- Hazardous Waste Disposal





Percent of Single Family Household Solid Waste Recycled
2008 Information
Click to download the PDF version.

Pounds of solid waste disposed per single-family household per week.

2008 Results: 26 pounds per week.

2008 Target: 26 pounds per week.

2009 Target: 25 pounds per week.

Influencing Factors: The amount of materials (both solid waste and recycling) discarded by single-family households declined by three percent in 2008. The declining economy is probably a major reason for this reduction. However, solid waste disposal per household decreased by six percent compared to a one percent decrease in recycling. Some of this reduction in solid waste disposal can be attributed to increased use of food waste collection services. In 2008, the King County Solid Waste Division continued to work closely with cities and haulers to increase the availability of food waste recycling services. The percentage of single-family households that could recycle food scraps with yard waste collected at the curb increased from 57 percent in November 2007 to 98 percent in January 2009. The Division also continued to implement the "Recycle Food. It's Easy to Do." and the "Recycle more. It's Easy to Do" media campaigns, both of which have resulted in increased participation in recycling programs. In 2008, two additional television ads were added to the "Recycle

Food. It's Easy to Do" campaign. In addition, recycling "how to" guides were distributed by commercial collection companies to over 137,000 customers - 61,000 more than in 2007.

Strategy Going Forward: These efforts will continue in 2009. In addition, the "Recycle More. It's Easy to Do." campaign will specifically target areas of the county that are recycling 30 percent or less.

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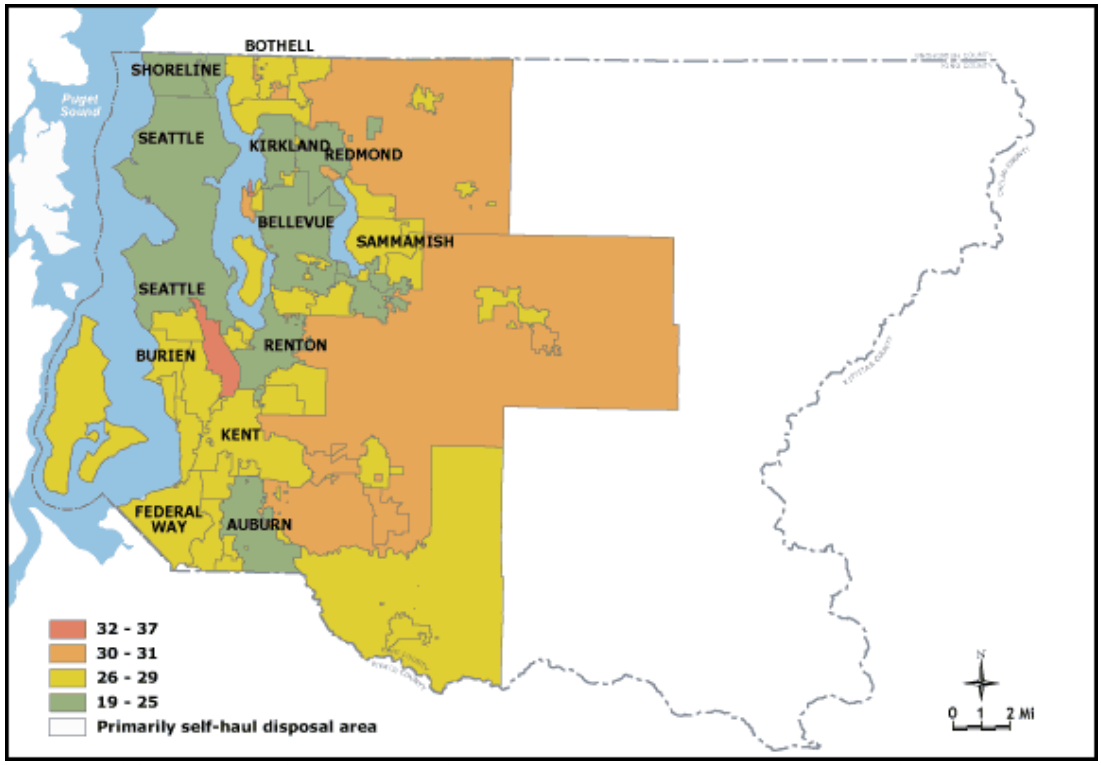


Pounds of Solid Waste Collected per Single Family Household per Week by Collection Area
2008 Information
Click to download the PDF version.

Pounds of solid waste disposed per employee per week countywide.

2008 Results: 2008 data not available until September 2009.

2007 Target: 23.5 pounds per week.

2007 Results: 26.4 pounds per week.

2008 Target: 23.5 pounds per week.

2009 Target: 23.5 pounds per week.

Influencing Factors: In 2007, garbage disposal was slightly higher than the county's target of 23.5 pounds per employee per week. This was due to a still expanding economy in early 2007 and because most of the recycling programs are targeting the residential sector. A decline in disposal per employee is expected in 2008 due to the declining economy.

Strategy Going Forward: The strategy for 2007 is for SWD to work with cities to increase recycling services in the non-residential sector.

Technical Notes: The data is countywide except for: a) the cities of Seattle and Milton, which are not in the King County solid waste system; Vashon Island, and includes the Snohomish Cuonty part of the City of Bothell.

Residents' recycling and disposal behavior via EBI

About this measure: The King County Environmental Behavior Index (EBI) tracks and reports on the adoption of selected environmental behaviors of King County residents. In 2004 and again in 2006, 1000 randomly selected respondents in King County participated in a telephone survey and reported on their household's behaviors related to:

- Yard Care
- Recycling And Disposal
- Environmentally Friendly Purchasing

Understanding residents' awareness and behavior guides a more cost-effective targeting of outreach efforts and helps evaluate whether the efforts to improve these behaviors are making a difference.

The 2006 Environmental Behavior Index was conducted in spring of 2006. The findings about yard care and purchasing behavior can be found under the performance measure on solid and hazardous waste management, which is here.

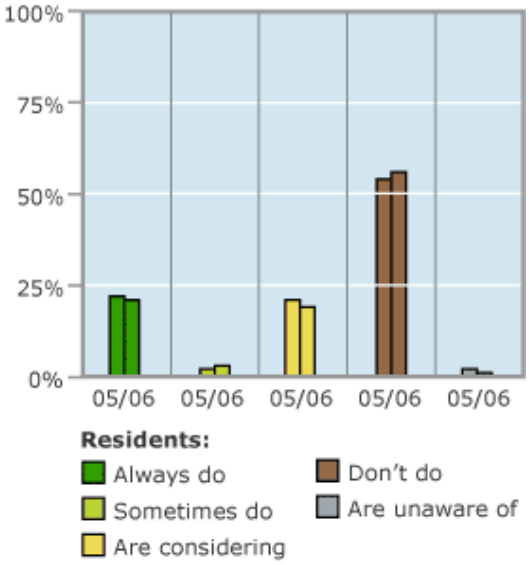
Below are details on findings for residential recycling and disposal behaviors.

2006 results: The 2006 survey of residents' recycling and disposal behaviors indicates that use of recycle containers at home is high and improving, as is proper disposal of paints, kitchen grease and prescription drugs. Proper disposal of compact fluorescent light and tubes is low and is slightly declining.

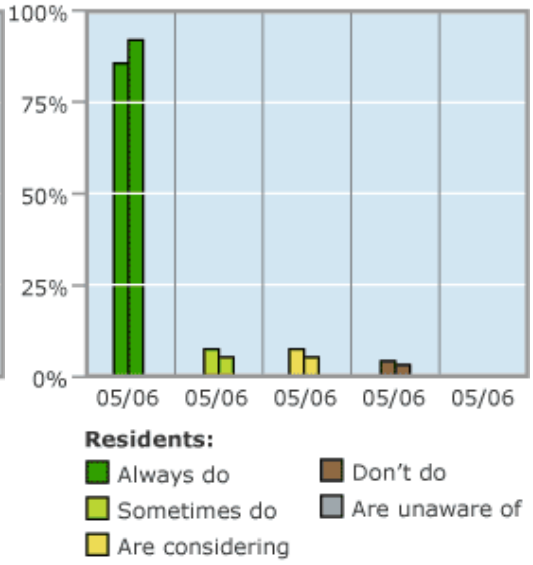
Influencing factors: In 2006, the Seattle City Council passed an ordinance making it illegal and punishable by fine to put selected recyclables in the garbage. There was significant media coverage of this new legislation, which likely influenced both awareness and behavior of residents throughout King County.

Strategy going forward: SWD will continue to work with cities to allow food waste recycling with yard debris. The SWD is partnering on a recycling education campaign, "Recycle More, Its Easy to Do" and is making further improvements to its Web site about general and food waste recycling.

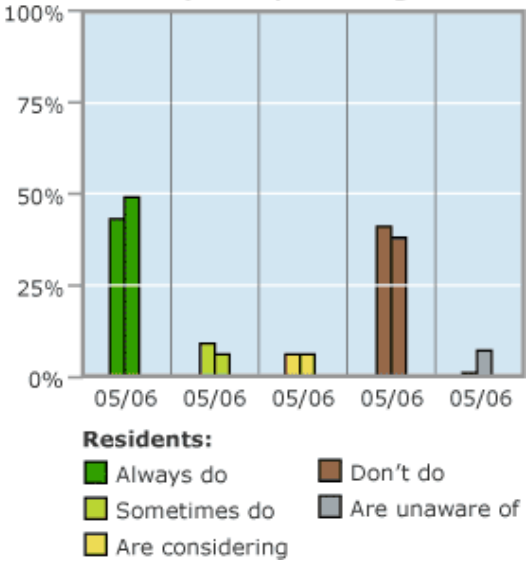
Proper disposal of compact fluorescents and tubes



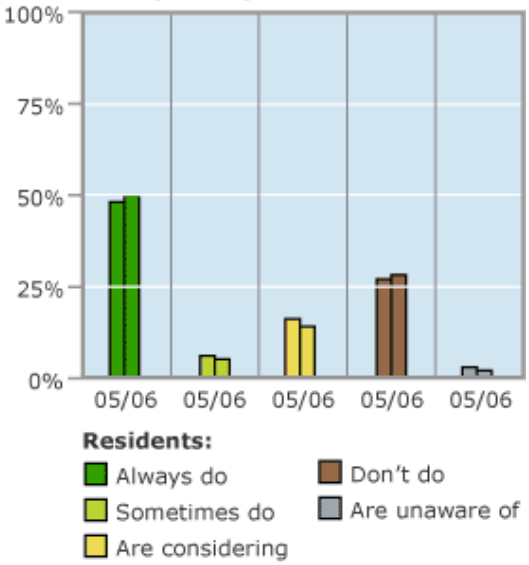
Proper use of recycling container at home



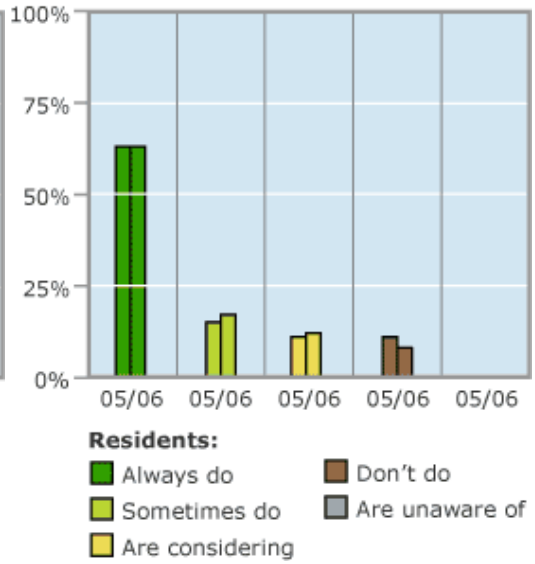
Proper disposal of prescription drugs

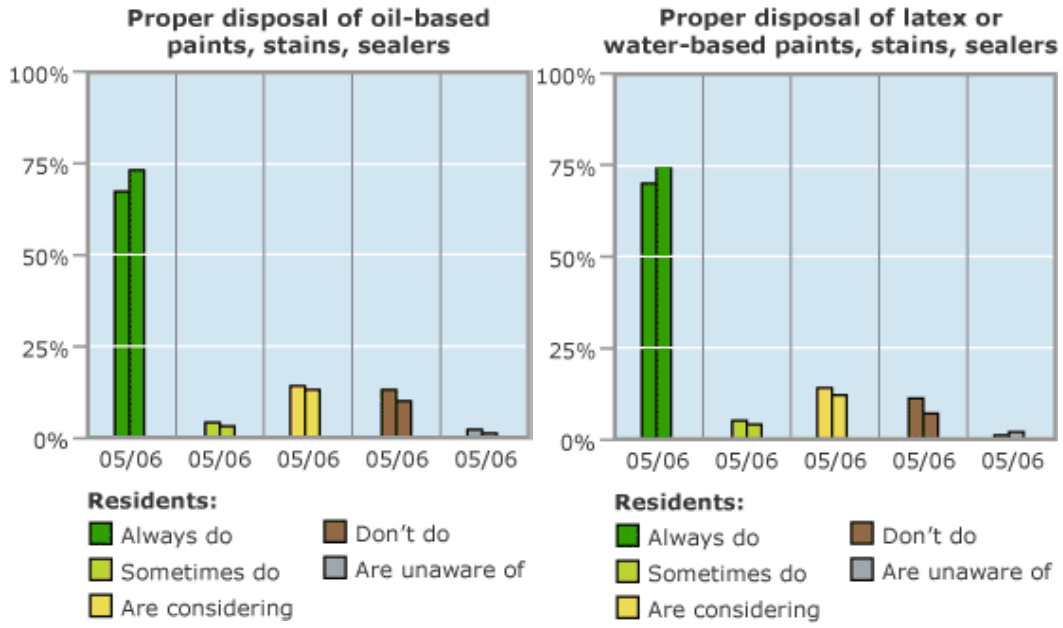


Proper disposal of food waste



Proper disposal of unwanted electronics





Seattle - King County Local Hazardous Waste Program

About this measure: This measure is a composite index of actions aimed at reducing exposure to hazardous materials. Below are descriptions and ratings of 5 key 2007 program areas of the Local Hazardous Waste Management Program and a rating of the degree that targets for these actions were met.

Waste pharmaceuticals project

Full implementation of the largest pilot unused medicine collection project in the United States.

Chart: # collection sites in WA on y axis, years ('06, '07, '08) on x axis (target revised to 30 total sites)

2006 results: 7 sites

2007 results: 25 sites

2008 target: 30

2007 results: Green. 25 Group Health Cooperative sites collecting waste medicines

Influencing factors: As a pilot project, new hurdles keep appearing. All clinical pharmacies in the Group Health system are finally operational after clearing many logistical hurdles. A few Bartell Drugs' retail pharmacies are next to roll out in '08.

Strategy going forward: Pilot project to wrap up in late '08 after testing a pharmacy take-back model. Having a few Bartell Drugs' sites will help to fully test this approach in addition to the Group Health sites. We will push for drug manufacturers and retailers to take over the long-term collection of unused medicines via a product stewardship system.

Nail salon English-as-a-second language business project

The purpose of this project is to work with nail salon workers for whom English is a second language to reduce exposure to hazardous chemicals.

2007 results: Green. Developed "healthy nail salon" guidelines in collaboration with the Environmental Coalition of South Seattle, Community Coalition for Environmental Justice, U.S. EPA and other partners. Tram Duong, ECOSS partner, visited 19 salons, four beauty schools and three nail supply distributors.

Influencing factors: Many connections made with the nail salon industry and with Vietnamese-

American community to build trust, research concerns, and develop safer alternative products and practices. Working with local NGO partners helps reach an audience skeptical of working directly with government.

Strategy going forward: Continue outreach to salons where Vietnamese-Americans are owners or predominant workers. Increase level of contacts and reach within this community. Achieve 50 salons implementing the suggested best management practices in '08 and 87 implementing best practices in '09.

Healthy schools project

The focus of this project is to reduce or eliminate exposures to key hazardous chemicals in all King County schools

2007 results: Yellow. 55 school inspections were completed, looking for mercury, lead glazes and high risk chemicals. Elemental mercury continued to be found in schools, and was removed. Explosive old chemicals such as crystallized ethyl ether were also uncovered and safely removed.

Influencing factors: We had hoped that we could rely on past inspections done through the Rehab the Lab project to assure that schools were, for example, mercury-free, but have found instead that pockets of old products continue to turn up. In addition to science lab supplies, our focus is turning to art supplies, where lead ceramic glazes, hexane-acetone glues and other high hazards are common.

Strategy going forward: Keep working with individual schools, school districts and the state Office of the Superintendent of Public Instruction. Develop high risk chemicals ratings and lists that can be disseminated by the state to influence all schools across Washington. Target for '08: 100 schools provides with guidance and incentives for removal and proper disposal of mercury and high hazard art chemicals.

Low-income governmental housing

The aim of this project is to reduce exposures to key hazardous chemicals found in public housing within King County.

2007 results: Yellow. Developed signed agreements with two out of three public housing authorities to eliminate and properly dispose of all mercury-containing thermostats as well as implement some pesticide-reduction strategies.

Influencing factors: Local housing authorities are stretched thin, yet are interested in working with us on a variety of hazardous chemical reduction strategies, both in their facilities and landscapes and in getting useful information directly to their residents.

Strategy going forward: Continue work with housing authorities, looking for avenues where our services best match their needs. In addition to mercury-reduction through fluorescent lamp recycling and thermostat change-outs, we will focus on integrated pest management techniques in '08 to explore ways to reduce pesticide use.

Flood hazard zones

This project aims to prevent the release of hazardous chemicals in the event of major river flooding in King County.

2007 results: Yellow. Completed 10 site visits of potential problem areas in the Snoqualmie Valley; gathered best management practice guidelines for storage and use of hazardous materials in flood zones from federal and other sources.

Influencing factors: Each flood zone valley within King County has a different mix of issues, from predominantly agricultural in the Snoqualmie to commercial and industrial developments in the Green. No one size fits all in terms of best management practices or outreach mechanisms.

Strategy going forward: We will continue to explore the best approaches to hazardous material storage concerns in areas subject to major river flooding and to work with those agencies, local governments and businesses who know flood-related issues the best.

2007 target: Draft best management practices for.

Technical Notes

For definitions and more detail.

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Updated: August 18, 2009

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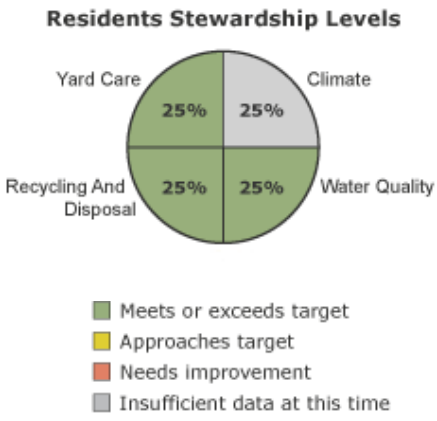
PERFORMANCE MEASURES - 2008 ARCHIVE

RESIDENTS STEWARDSHIP

2008 Rating: 

About this measure: The King County Environmental Behavior Index (EBI) tracks and reports on the degree selected environmental behaviors are practiced by King County residents. In 2005, 2006, and 2008, approximately 1000 randomly selected residents in King County participated in a telephone survey and reported on their household's behaviors related to:

- Yard Care
- Recycling And Disposal
- Water Quality
- Climate



Understanding residents' behavior guides a more cost-effective targeting of outreach efforts and helps evaluate whether the efforts to improve these behaviors are making a difference.

The 2008 Environmental Behavior Index was conducted in spring of 2008. The findings about recycling and disposal information can be found under the performance measure on solid and hazardous waste management.

Below are details on the findings for the yard care and purchasing areas.

Residents' Purchasing Recycling And Disposal

2008 results: This year's survey indicates that choosing less-toxic cleaning products and less-toxic paints and giving experiences instead of physical gifts have all improved in recent years.

2008 target: Improving trends in purchasing practices

2009 target: Improving trends in purchasing practices

Influencing factors: Many factors affect the purchasing decisions. Cost, product convenience, and availability are all influential. Public awareness about the impacts of these decisions on the health and environment also plays an important role.

Strategy going forward: King County is advancing efforts to improve purchasing practices in several coordinated ways. The Solid Waste Division is emphasizing public education through the Eco-consumer program and is sponsoring Eco-Deals — a partnership with makers of green products to use coupons and discounts to promote green products.

The King County is also involved nationally, regionally, and locally with product stewardship efforts that require manufacturers to establish product collection programs. The "Take it Back Network" is expanding locations and opportunities to recycle fluorescent bulbs, electronics and other products.

Residents' Yard Care Practices

Related Information

Rural Stewardship

Forestry Stewardship

Farm Stewardship

2008 results: This year's survey of King County residents confirms that yard care behaviors indicates significantly improving practices regarding:

- composting
- controlling invasive plants, and
- reducing lawn size.

The yard care practices that are steady or only slightly improving include:

- lawn watering
- adding native vegetation, and
- proper treatment of treatment of trees and shrubs for insects/diseases.

2008 target: Improving trends in residents' yard care practices

2009 target: Improving trends in residents' yard care practices

Influencing factors: Recycling yard waste and changes in pesticide use are fairly easy behaviors to change and improve—and there are many voices, messages and incentives to encouraging such change. Reducing lawns, using the right fertilizer, using compost and restoration with native plants, all involve more complex and costly changes and have fewer supporting messages or region wide programs explaining how to do it.

Strategy going forward: Water and Land Resources Division (WLRD) will continue to partner with local cities—reaching 13 neighborhoods in 2009 —using Natural Yard Care classes to help folks transition into smaller lawns, use of native plants and pervious pavements and proper fertilizing and composting. Other counties (Pierce and Snohomish) are beginning to replicate our program.

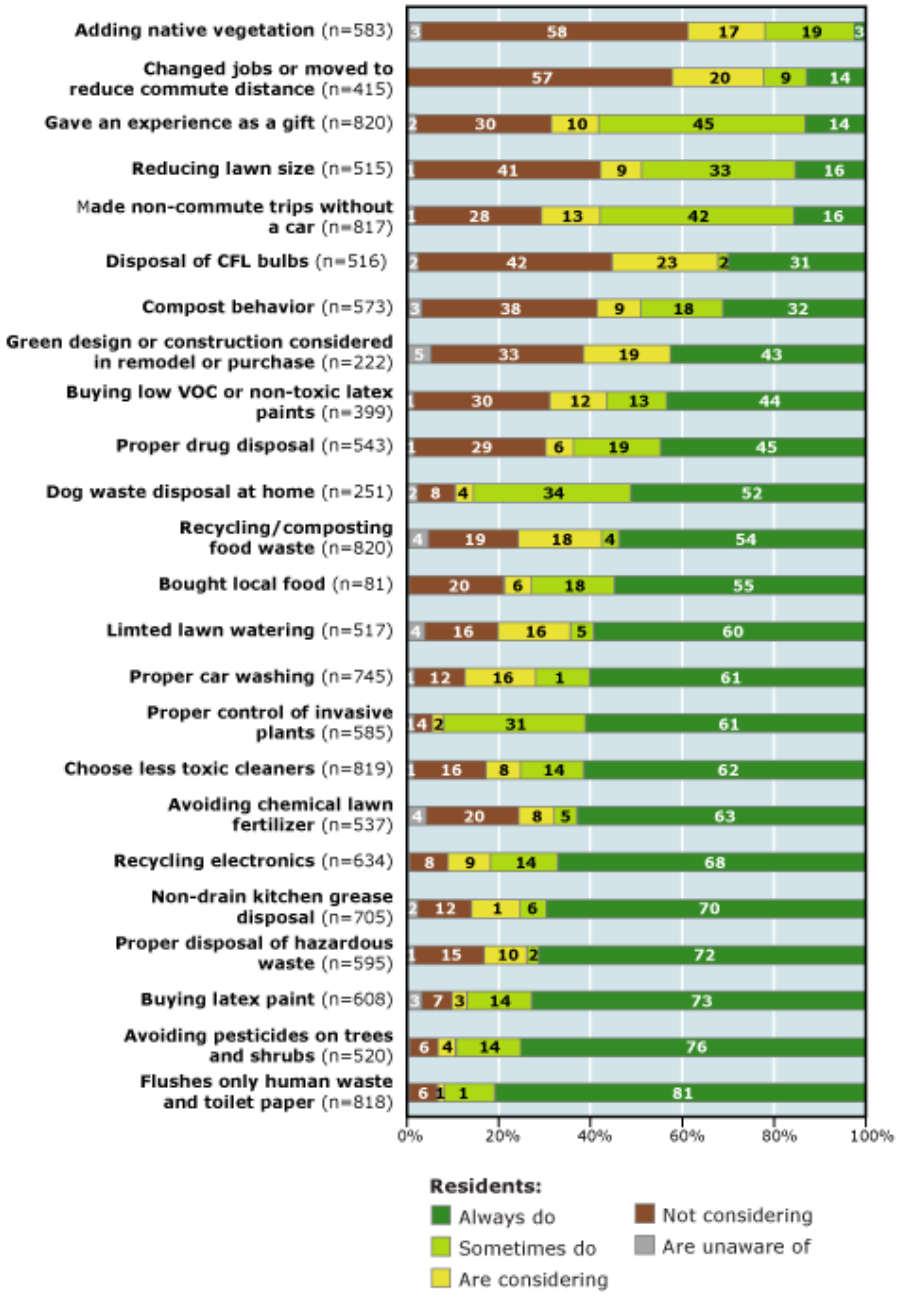
The new online, "Northwest Native Plant Landscaping Guide" is being promoted in conjunction with the trainings to provide technical assistance to residents.

A Natural Yard Care Web site created by our Online Solutions group in 2008, should be up and running by 2009. The King County TV Yard Talk show will continue to feature information on these topics. Also in 2009, more relevant information about stormwater and best management practices (car washing, pet waste, infiltration and yard care) will be offered through the Natural Yard Care classes, Yard Talk, and via an upcoming series of broadcast ads to be aired in Sept/Oct 2009 on cable networks.

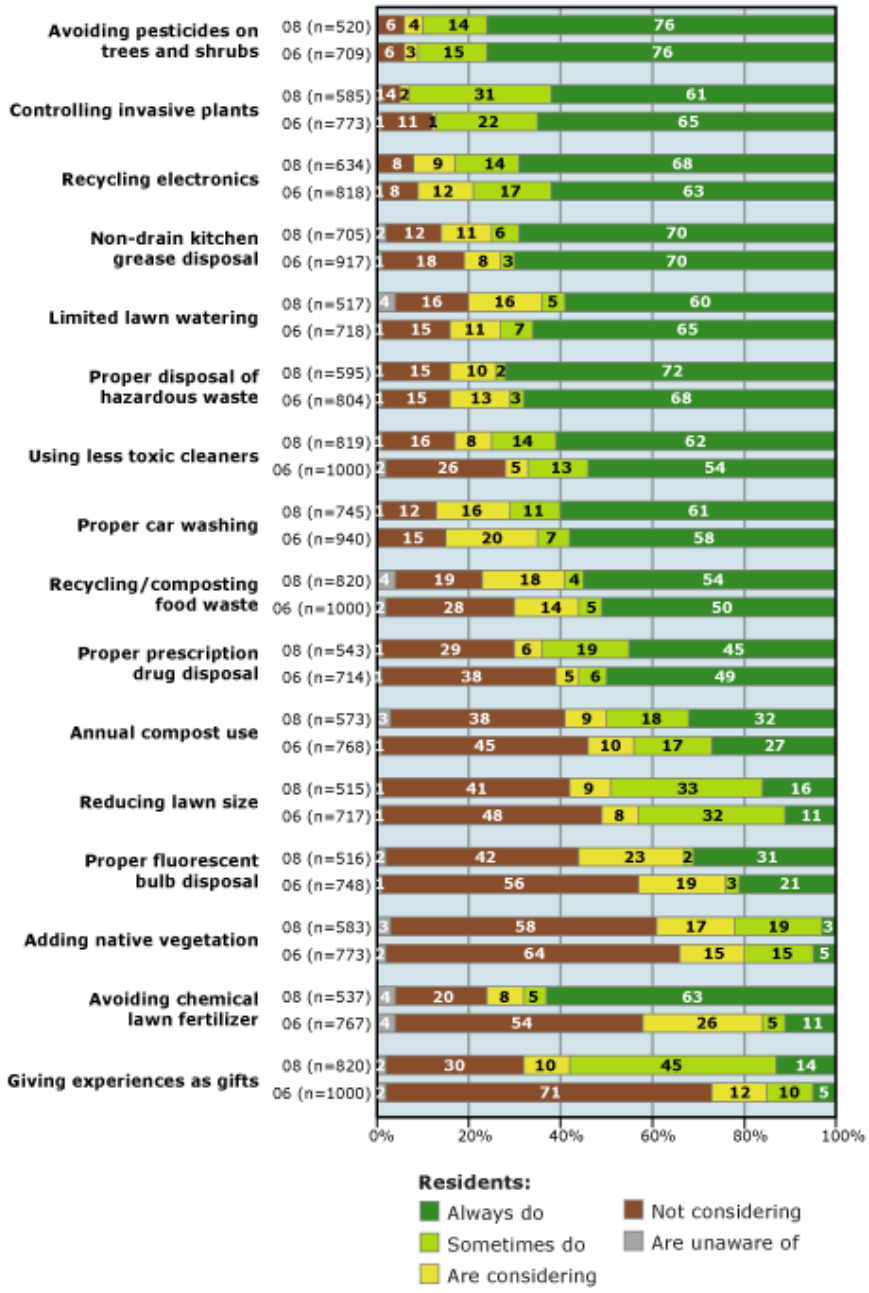
Technical Notes:
Pdf of 2008 environmental Behavior Survey Report

Environmental Behavior Survey Findings

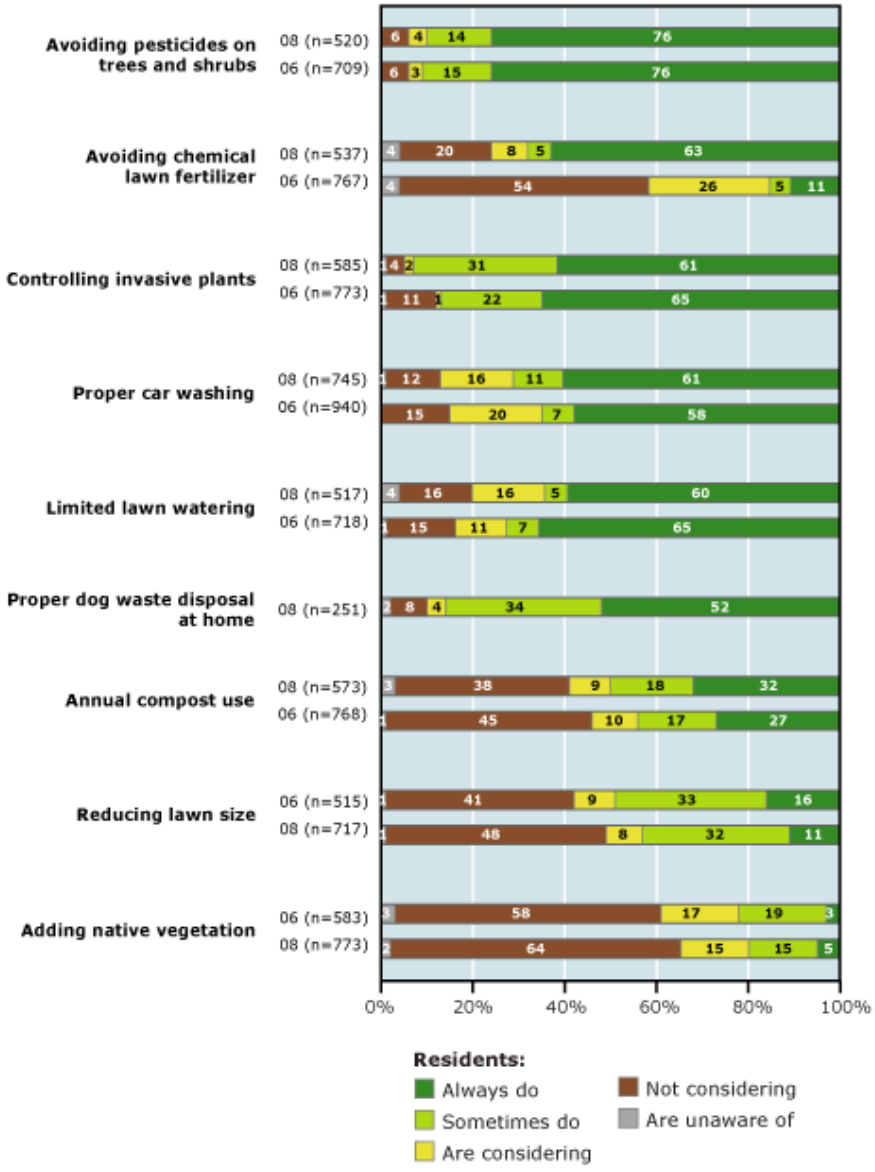
24 Behaviors 2008



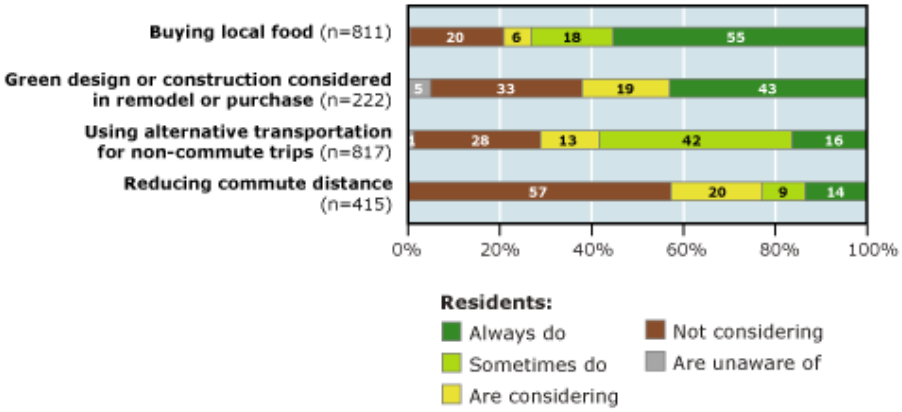
16 Behaviors: 2006 and 2008 Comparison



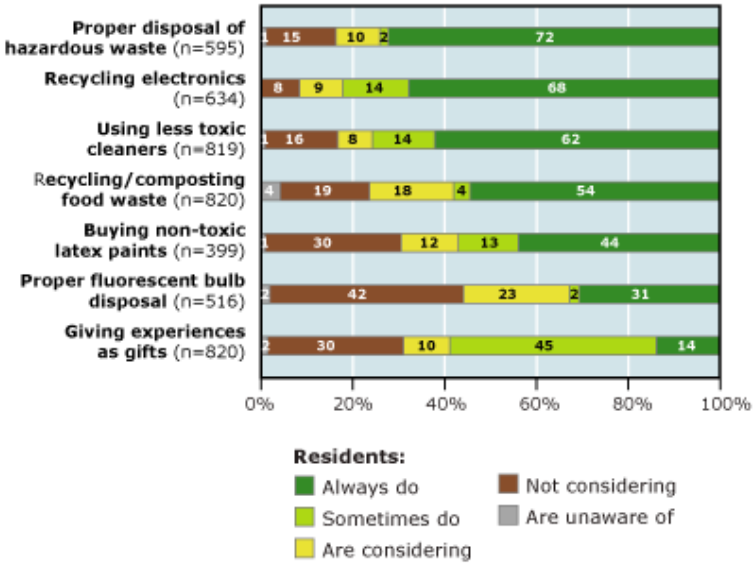
Yardcare Behaviors 2008 and 2006



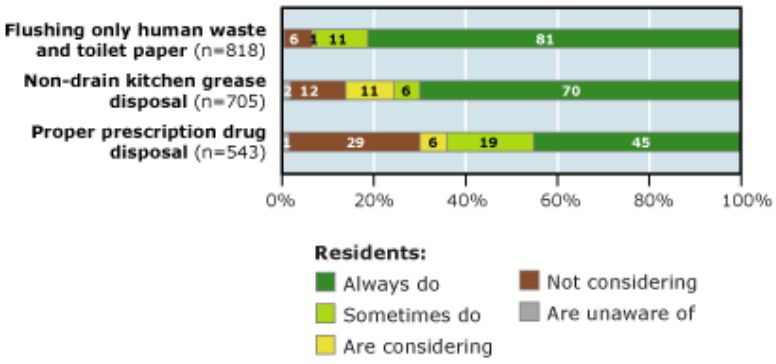
Climate Behaviors for 2008



Disposal Behaviors 2008



Clean Water Behaviors 2008



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PERFORMANCE MEASURES - 2008 ARCHIVE

CHINOOK SALMON RECOVERY PROJECTS

2008 Rating: ⇔

About this measure: In 1999 Chinook salmon were listed as threatened under the Endangered Species Act (ESA). In 2005, the Puget Sound Region, including King County and all its partners, completed a comprehensive science-based Salmon Recovery Plan. The Plan outlines the necessary actions to achieve the delisting of Chinook salmon and benefit other salmonids including coho, and (the now ESA-listed) steelhead.

This KingStat measure reflects King County's completion of Salmon Recovery Plan capital restoration projects and land acquisitions across three watersheds, Snoqualmie, Cedar, and Green in a ten-year period 2006-2015. A total of 136 projects have been identified in the unincorporated portions of King County for which King County is the implementing agency. The completion of these projects is critical for the region's efforts to restore runs of threatened Chinook salmon.

2008 Results: 6 projects completed in 2008

- 1 reach scale acquisition (Rainbow Bend)
- 3 large restoration (Camp Gilead, Newaukum Ck, Cedar Rapids), and
- 2 series of small habitat restoration projects (Snoqualmie and Green)

Cumulative project completion from 2006-2008: 15 projects

2008 Target: Implementing 40 projects between 2006-2008 would be required to keep pace toward completion of 10-year list by 2015.

2009 Target: 8 projects are scheduled for completion in 2009

Completing 54 total projects during 2006-2009 would keep pace toward accomplishing the 10-year list by 2015.

Influencing Factors: King County's ability to meet our target is primarily hampered by a lack of dedicated funding for salmon recovery capital actions. The majority of dollars to support our success to date come from external grant sources. The reliance on these grant sources results in inconsistency in annual funding amounts and substantial administrative burden to apply for and track these dollars.

Strategies Going Forward: King County continues to work strategically to prioritize and sequence its efforts to ensure most important projects are implemented first. The county is actively pursuing acquisitions and capital design and construction projects across all watersheds. We work closely with our regional partners to identify leveraging opportunities and other partnerships to facilitate the implementation of on-the-ground work. We will continue to pursue a more stable funding mechanism for salmon recovery and watershed protection efforts.

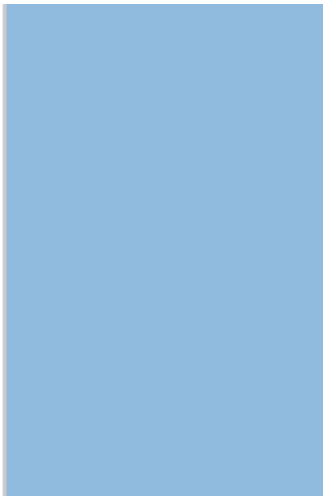
Related Information

Rural Stewardship

Forestry Stewardship

Farm Stewardship

Technical Notes: Projects are only listed as complete once construction is completed or all acquisitions have occurred based on a planned protection area. Therefore this measure does not reflect the current progress in design/permitting, nor does it reflect the list of individual acquisitions for watershed protection in a given year.



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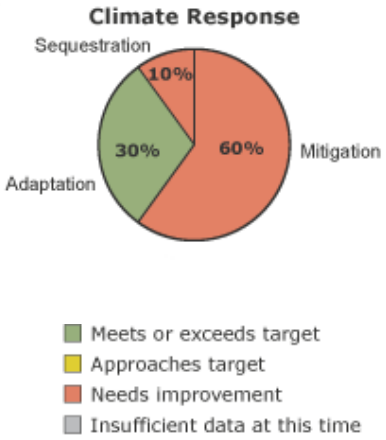
PERFORMANCE MEASURES - 2008 ARCHIVE

CLIMATE RESPONSE

2008 Rating:

About this measure: This performance measure addresses the degree that King County achieves its climate response objectives related to:

- Mitigating (reducing) greenhouse gas emissions
- Sequestering carbon, and
- Climate change impacts preparedness (adaptation).



In 2003, King County Government operations created about 420,000 metric tons of carbon dioxide equivalents (MTCO2e) annually, or about 2% of the King County region's emissions. These operational emissions were equal to the annual emissions of about 105,000 U.S. vehicles. Production of greenhouse gases (primarily methane) from landfills and wastewater treatment was the dominant source of emissions, with transportation, especially from transit busses, a close second. Electricity usage for operations was the third most important source of emissions, accounting for about 15% of the total.

Performance Targets: King County's climate response targets are articulated in the 2008 King County Comprehensive Plan and the 2007 Climate Plan. Primary goals as defined in the Comprehensive Plan are to:

- Reduce all King County government greenhouse gas emissions to 6% below 2000 levels by 2010
- Collaborate with other local governments, businesses, and residents in the region to reduce greenhouse gas emissions throughout the region to 80 percent below 2007 levels by 2050

In addition to these emissions mitigation targets, the Comprehensive Plan articulates ways that King County should be a leader in promoting carbon sequestration as well as climate change impacts preparedness.

Status: As a member in the Chicago Climate Exchange, King County has legal and fiscal commitments to reduce its direct greenhouse gas emissions from gasoline, diesel, heating oil, natural gas, and steam usage. For 2007, the emissions reduction target was 1.5% below 2000 levels; emissions were reduced by more than 5% below 2000 levels. In 2008, emissions rose to 1.3% above the 2000 baseline, slightly more than the 3% reduction goal.

For an analysis of the region's performance status to reach the overall reduction goal of 80% below 2007 levels by 2050, see the Atmosphere section of KingStat's Environmental Indicators.

Influencing Factors: The key factors that influence King County's ability to meeting climate response targets are:

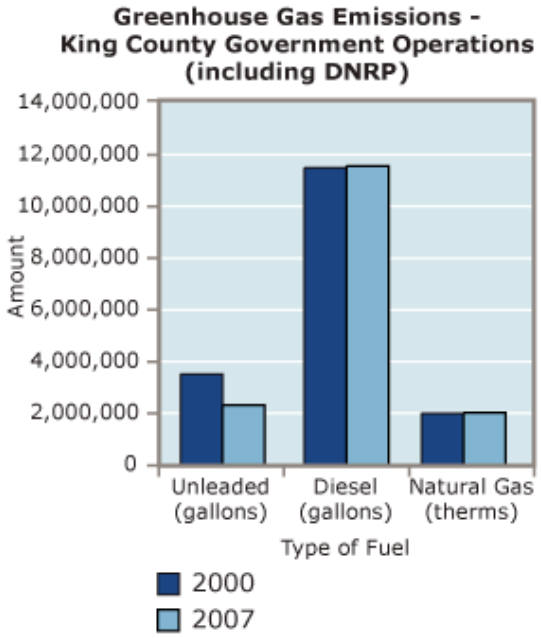
- future price of energy
- cost and adoption rate of conservation and renewable energy technologies
- leadership and operational level commitments to emissions reduction
- policy development, accounting advancements, and staff training
- science to inform and optimize carbon sequestration and adaptation strategies

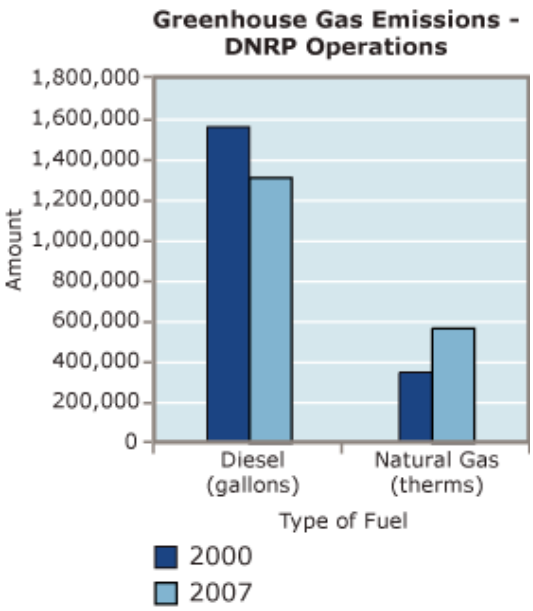
Related Information

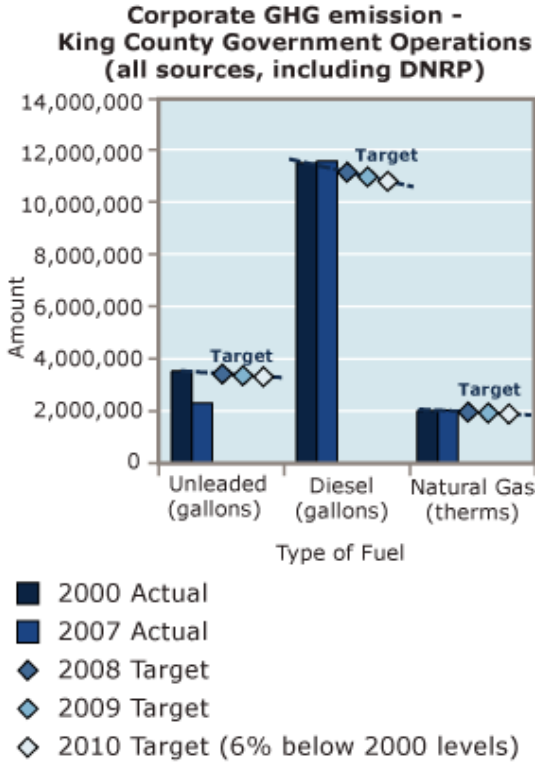
- Global Warming Action Plan
- Executive's Global Warming site
- King County Climate Change Conference results

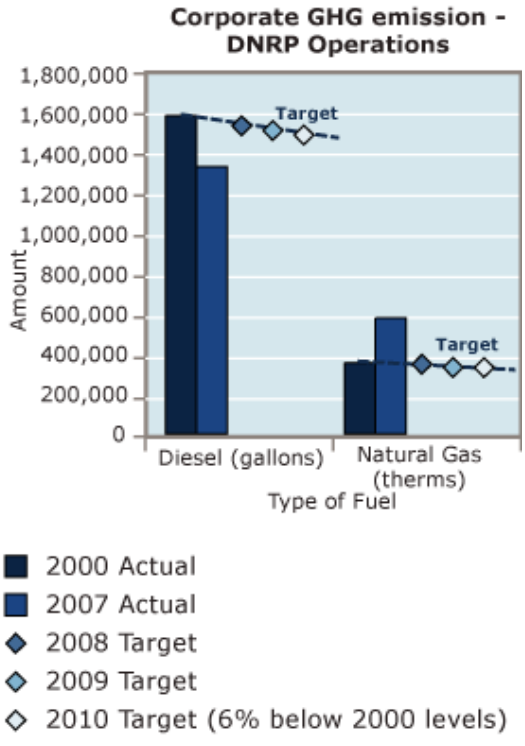
- technologies to measure and improve actions that prepare King County lands for unavoidable impacts of climate variability

Existing Response for 2008 and Priority New Actions for 2009 The 2008 Annual Climate Report, published in February 2009. This seven page report concisely summarizes key efforts to reduce and sequester greenhouse gas emissions and prepare for expected climate impacts.









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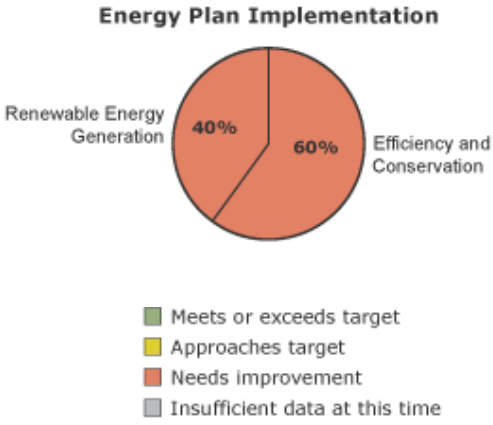
PERFORMANCE MEASURES - 2008 ARCHIVE

ENERGY PLAN

2008 Rating:

Energy Plan Implementation

Progress toward Implementation of King County Energy Plan



About this performance measure: King County Executive Ron Sims issued an Executive Order in 2006 establishing renewable energy use goals for King County government operations and directed the development of a plan to meet these goals.

The renewable energy order requires that, compared to 2007 baseline levels:

- 50% of King County's facility and operations energy come from renewable sources by 2012 (except for the Metro Bus Fleet)
- 35% of energy for Metro buses come from efficiencies and renewables by 2015
- 50% of energy for Metro buses come from efficiencies and renewables by 2020

King County has mapped a comprehensive strategy for achieving the Executive Order goals through its Energy Plan, major elements of which include:

- Staffing an Energy Task Force representing all major energy-using departments and divisions in the county to implement the Plan.
- Broad adoption of utility accounting software to benchmark facilities and track progress towards energy goals; reporting results to Executive
- Energy policy definition and implementation to improve energy efficiency, conserve energy aggressively, and expand use of renewable energy sources as described in the sections below.

Renewable Energy And Energy Capture

Supply 50% of King County's non-transit (Metro Transit Bus) energy from renewable sources by 2012, and 35% of King County's transit energy from efficiencies and renewables by 2015. Maximize the conversion of waste-to-energy at county facilities.

About this performance measure: In Executive Order PUT 7-6 directed the county to ultimately supply half (50 percent) of its energy requirements from renewable sources. All the county divisions except DOT/Transit are required to meet this goal by 2012, while Transit is allowed 8 years more (until 2020) to reach the same goal, with option to meet this requirement by equivalently reducing supply requirements through efficiency increases in their operations. The county does not specify preferred sources for these renewable energy supplies.

At the same time, King County provides disposal services for many residents' waste products, both solid and liquid. Processing these waste streams uses significant energy, but can also extract energy from some of them if properly designed. Currently, the county produces 317,350 million British

Related Information

- Global Warming Action Plan
- Executive's Global Warming site
- King County Climate Change Conference results

Thermal Units (MMBtu) per year of renewable energy from its own waste-to-energy operations. This represents almost 60% of renewable energy sources currently in use in the county. While setting very high goals for the portion of energy supply that comes from renewables, the county has expectations that it will be able to meet much or all of its renewables commitments using county-controlled renewable resources.

2007 Results:

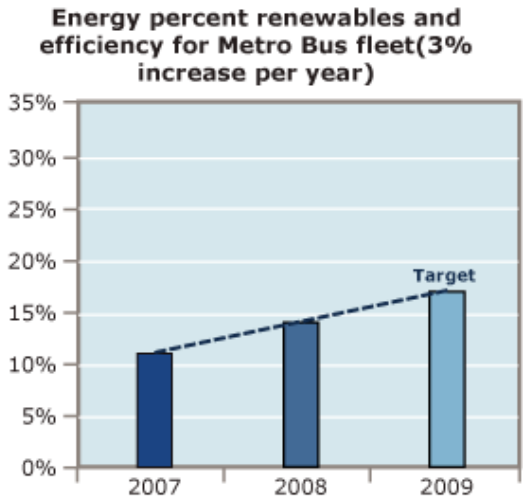
- 15% Renewable energy supply to county operations (11% in Transit, 19% in all other operations)
- Substantial existing county renewable resources used -- Large biodiesel purchases (228,399 MMBtu) may not be sustainable in future because of costs
- Selection of best development alternatives for large waste-to-energy projects in Solid Waste and Wastewater

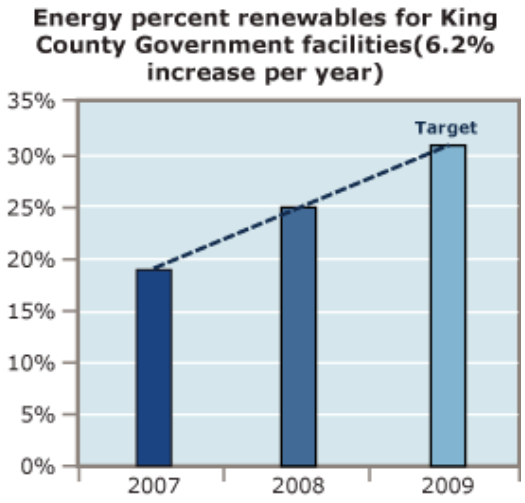
2008 Targets: Increased renewable energy supply to county operations (nominally to 14% in Transit, 25% in all other operations)

2009 Targets: Further increases in renewable energy supply (nominally to 17% in Transit, 31% in all other operations) Solid Waste division landfill gas project expected to come on line selling "renewable" gas

Influencing factors: A primary factor in achieving renewable target is the speed and degree that county renewable resources are developed (from Wastewater and Solid Waste divisions). Another factor is the future price of renewable energy technologies and developments and the price of "Renewable Energy Certificates," (RECs) on local energy markets.

Strategy going forward: With the development of a large landfill gas scrubbing operation at Cedar Hills landfill in 2009, the amount of "renewable" energy resource the county controls and can claim as available to meet its goals (either as greenhouse gas credits or some form of renewable energy certificate) should dramatically expand while the gas (which is typically classed as a "renewable resource") is extracted from the landfill. While challenged to meet its renewable energy goals in the short term (next 2-3 years), the county should have enough renewable energy from the landfill to exceed its goals set in the Executive Order for approximately 20 years after 2010. This assumes the Solid Waste division is able and willing to certify and share its Cedar Hills landfill gas greenhouse gas reduction credits or equivalent RECs with the entire county to meet the county's renewable energy goals. If this is not allowed or impractical meeting the renewables goals may be quite expensive. What the long term strategy for renewables may be beyond the 20 year life of the landfill is unclear at this time.





Energy Efficiency And Conservation

(E_2) Achieve a 10 percent normalized net reduction in County energy use by 2012.

About this performance measure: Efficiency and other types of energy savings strategies are widely recognized to be the appropriate first line of attack to reduce the impacts (cost and environmental) of energy uses, because saving energy is usually cheaper than supplying energy. The Energy Plan sets an easily measurable and attainable performance goal to reduce energy use 10 percent in county departments over the next 5 years against 2007 levels. The interim targets presented below assume constant progress to the 5-year goal; however, energy savings acquisitions are typically less regular, so year-to-year use reductions may be different.

2007 Results:

- 2007 established as baseline year
- County efficiency / conservation project history assembled
- Energy Task Force agreed on efficiency goals

2008 Targets:

- 2% energy use reduction in County operations from 2007
- Staff training and education on energy efficiency
- Energy auditing and efficiency / conservation projects

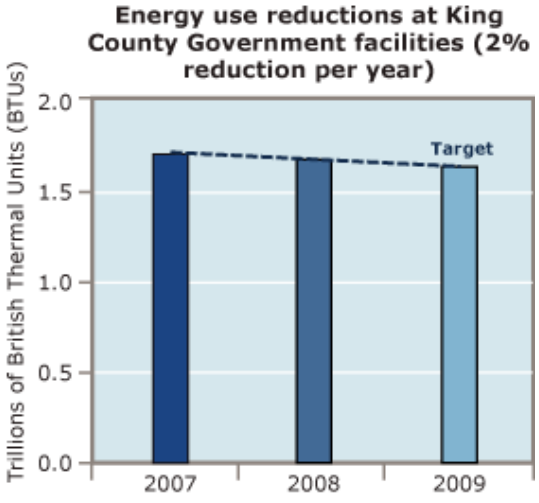
2009 Targets:

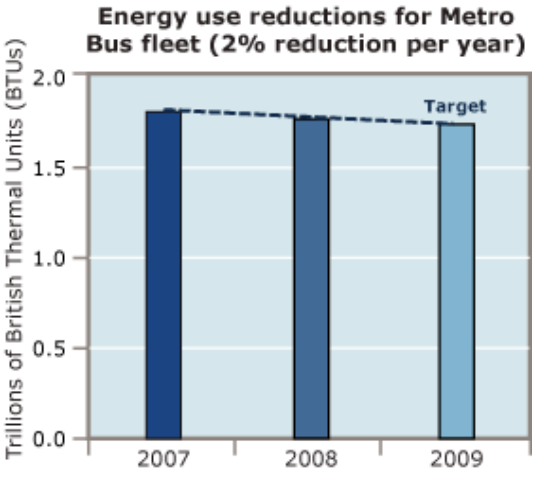
- 4% energy use reduction in County operations from 2007
- Continued auditing and implementation of energy saving projects

Influencing factors: Leadership and operational level commitments to energy saving, staff training on methods to save and track savings, and directives to incorporate these activities in their work; financial support for programs and projects that will result in savings; tracking, reporting and rewarding success in energy savings efforts.

Strategy going forward:

- Educate / train staff on energy saving strategies
- Conduct and/or update resource efficiency audits in all county facilities, and develop energy savings action plans for each facility audited
- Develop detailed energy management plans for energy intensive special-purpose facilities such as prisons
- Secure commitments to streamlined funding approaches and for specific projects.
- Pursue utility grant funding and other funding





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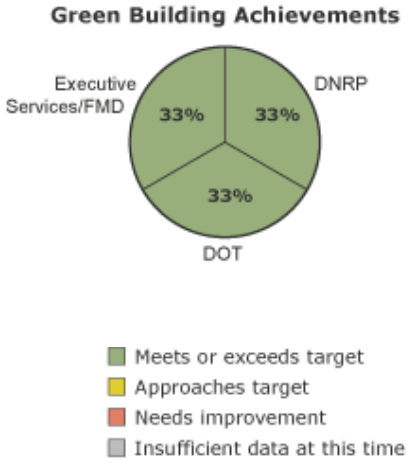
PERFORMANCE MEASURES - 2008 ARCHIVE

GREEN BUILDING ACHIEVEMENTS

2008 Rating: ↑

Percent of new, eligible, construction, renovation and remodeling projects within King County government that have achieved any level of Leadership in Energy and Environmental Design (LEED) rating.



About This Performance Measure: This measure presents the percent of commercial buildings built by King County government that meet certain environmental standards. The standard being used is the national Leadership in Energy and Environmental Design (LEED) rating system. The U.S. Green Building Council (USGBC) developed the LEED rating system to provide a benchmark for the design and construction of high performance commercial green buildings. LEED recognizes performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.

How is our performance?

2008 Results: 100%

2008 Target: 100%

2009 Target: 100%

Influencing Factors: Factors that influence the green building achievement include the training level of project managers, the expertise of design and construction contractors, and the level of support for sustainable building by division and department leadership. The eligible projects that received LEED certification in 2008 were the Marymoor Maintenance Facility ("Certified") and the Shoreline Recycling and Transfer Station ("Platinum").

Strategy Going Forward: In 2008, an updated green building and sustainable development ordinance was adopted by the King County Council. The ordinance requires new eligible county-built and financed building projects to attain a LEED Gold rating. The Solid Waste Division (SWD) will continue to provide LEED training and technical assistance to King County project managers. Additionally in 2009, King County is developing protocols for systematically identifying and driving sustainable performance characteristics into the wide array of infrastructure projects that King County builds, including bridges, regional trails, and wastewater and stormwater facilities.

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Related Information

Sustainable Building Topics

- Other reliable environmental data sources for King County
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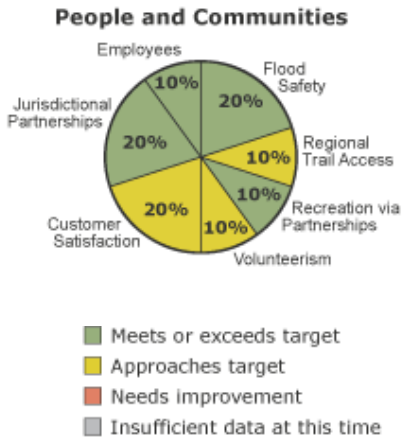
PERFORMANCE MEASURES - 2008 ARCHIVE

PEOPLE AND COMMUNITIES

2008 Rating: ⇔

This roll-up measure summarizes the degree DNRP is achieving its **People and Communities goal**:

Protect and improve human health, safety, and wellness — minimize hazards (including toxic exposures and flood risk), maximize opportunities for community building and fitness, build internal capacity for excellence in service delivery.



2008 results

DNRP's rating for the performance measures that support this goal is a yellow — signifying results are within 10 percent of target.

Areas under this goal where DNRP performed well:

- Jurisdictional Relationships
- Recreation Service Delivery via Community Partnerships
- Employees
- Flood Safety Program Advancement

Areas under this goal where DNRP performance approaches target:

- Regional Trail Access
- Customer Satisfaction
- Volunteering

Key influencing factors

Because DNRP is only one of many entities with influence over King County's environmental quality, collaborating with partners is essential to the department's mission. Additional city incorporations and annexations are elevating the role

- Flood Protection
- Regional Trail Access
- Recreation Via Partnerships
- Volunteerism
- Customer Satisfaction
- Jurisdictional Parterships
- Employees

Back to top

Related Information

DNRP Budget And Organization Chart

Natural Resource Lands

Greenprint

Water and Land Resources Division

King County Parks & Recreation

Interactive Parks Map

We welcome your feedback and suggestions to improve this site, such as:

- Other reliable environmental data sources for King County
- Adjustments to the weightings for indicators and performance measures
- Mistakes to fix

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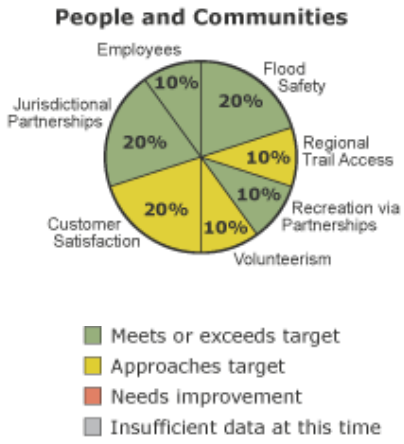

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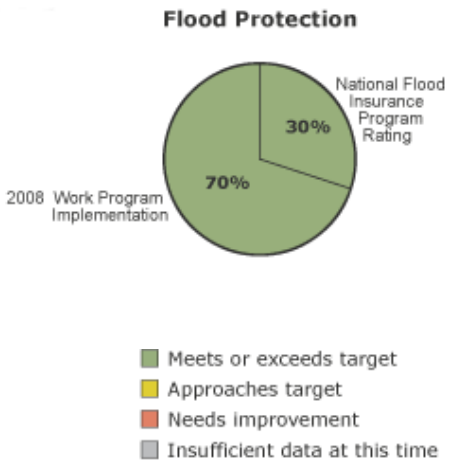
PERFORMANCE MEASURES - 2008 ARCHIVE

FLOOD PROTECTION

2008 Rating:



About this measure: This measure describes the flood hazard risks reduced through the King County flood protection program. King County's flood protection program went through a significant transition in 2007, and this one-time measure describes the degree the program was authorized and funded. Future measures will assess changes in flood risk exposure and vulnerability that result from implementation of the County's flood protection program.

2007 results: During 2007 King County took several significant steps to identify and respond to the flood hazards facing our communities. First, in January 2007, the King County Council adopted the 2006 Flood Hazard Management Plan, updating the 1993 Flood Hazard Reduction Plan. This Plan includes an evaluation of flood hazard vulnerabilities and an action plan of capital projects and programmatic activities intended to reduce flood risks throughout the County.

Following adoption of the Plan, the Council then authorized the formation of the King County Flood Control Zone District (KCFCZD) under RCW 86.15, including the voluntary establishment of an Advisory Committee of 15 elected officials to provide the KCFCZD Board of Supervisors with expert policy advice on the District's work program priorities and budget. The Advisory Committee is supported by King County staff with input and recommendations from Basin Technical Committees comprised of public works and planning officials from cities throughout the County.

Based on input from the Basin Technical Committees and King County staff over the spring and summer of 2007, the Advisory Committee submitted a recommended work program and budget to the Board of Supervisors in August, including a recommended funding level for 2008. In November 2007 the Board adopted these recommendations and authorized funding of approximately $33 million in 2008 for capital and operating programs targeted at repairing flood damage from the November 2006 floods and initiating levee rehabilitations on each major river system in the County.

2007 target: During 2007 the target for the flood risk reduction program were as follows:

- Adoption of a comprehensive flood risk reduction plan to guide the County's flood risk reduction efforts
- Creation of a countywide Flood Control Zone District to provide consistent, efficient, and strategic flood protection services throughout the County.
- Adoption of a work program and budget sufficient to implement the recommendations of the 2006 Flood Plan.

Influencing Factors: King County's ability to implement the meet 2007 targets was influenced by the participation, involvement and support of cities through the Basin Technical Committees and the Advisory Committee, as well as actions by the KCFCZD Board of Supervisors.

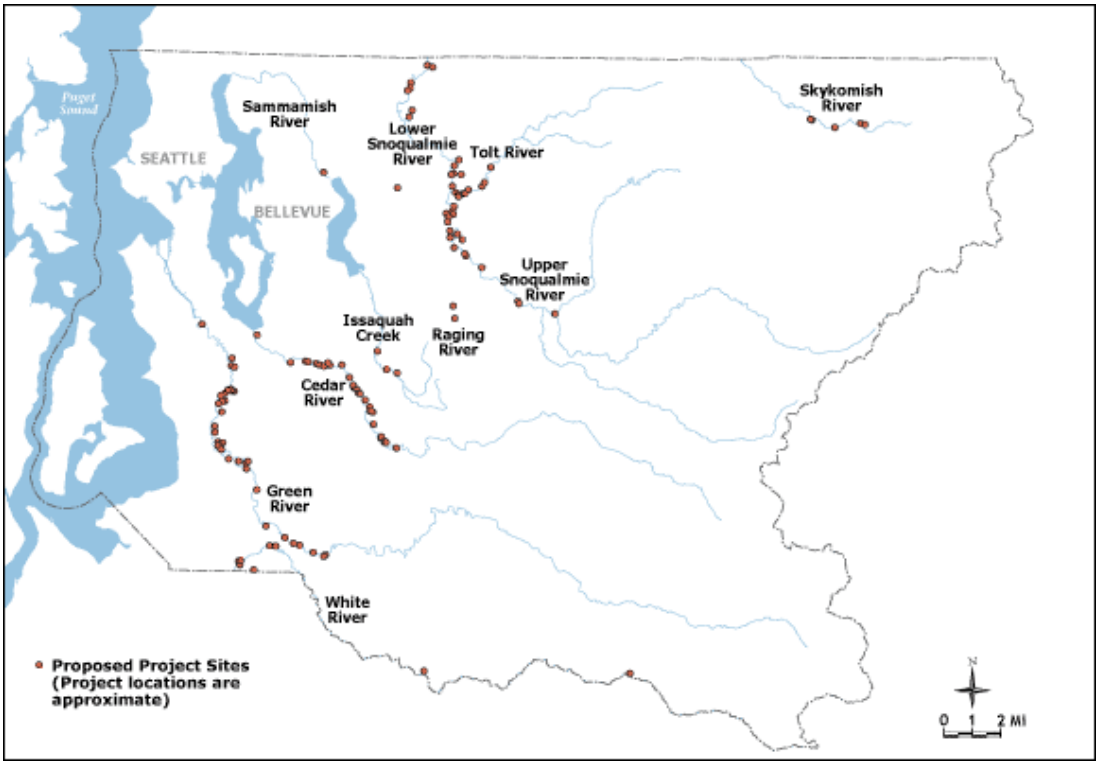
Strategy Going Forward: Activities during 2007 established the planning, funding, and decision-making foundations for King County's flood protection efforts. During 2008 we will be evaluating

Related Information

- How to prepare for a flood
- Flood Buyout and Home Elevation Program
- King County Flooding Topics
- Interactive Hazard Areas Map
- Master Recycler Composter

methods for assessing the flood hazard reduction impacts of the District's capital and operating programs. There are several possible approaches, ranging from the relatively coarse Hazard Vulnerability Analysis contained in the 2006 Flood Plan to the data-intensive HAZards United States (HAZUS) software package developed by FEMA. The successful approach must include basic risk assessment capabilities, such as:

1. Identification of flood, erosion, and channel migration hazards,
2. Assessment of the potential impacts of the hazard based on past flood conditions, current flow data and land use, and tailored to each major river system and individual river reaches,
3. Analysis of the hazard exposure or vulnerability for a selected area including impacts to life, safety and health, structures, natural and environmental areas, future development and economic areas.
4. Estimate the impacts of both capital and programmatic actions implemented by the King County Flood Control Zone District.



Water and land resources division capital improvement project locations
2005 - 2007
Click on each river name to download a detailed PDF map.

Technical Notes

For definitions and more detail.

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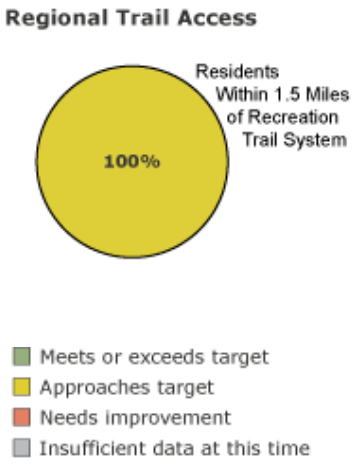
PERFORMANCE MEASURES - 2008 ARCHIVE

REGIONAL TRAIL ACCESS

2008 Rating: ⇔

Residents' proximity to regional trails



About this Measure: Regional trails in King County are important public amenities providing active recreation opportunities and regional mobility. The Regional Trails System is 300 miles of paved and unpaved greenways. The King County Parks Division has developed and/or maintains the majority of these facilities.

2008 results: 69% of county residents live within 1.5 miles of the Regional Trail system

2008 target: 70% of county residents live within 1.5 miles of the Regional Trail system

2009 target: See detailed description below

Going into 2009, four measures will be referenced to track and report on progress toward developing the King County Regional Trail System:

1. 1) access and proximity to population;
2. 2) closing existing gaps in the network;
3. 3) redevelopment/upgrading of older existing trails; and
4. 4) ensuring safe trail bridges.

Proximity: the proximity of regional trails to populations within King County is an important measure of their accessibility. Generally, the closer a trail is to populations, the more likely people will be to use them and enjoy their benefits. These benefits include:

1. 1) active recreation open space greenways for walking, jogging, bicycling, skating, and other recreational activities; and
2. 2) nonmotorized mobility/commuting to work and school.

Starting in 2009 we have selected a distance of one mile from a regional trail as the standard measure of proximity.

Closing Gaps: closing gaps in the network is critical to its overall functioning, particularly for regional mobility and commuting. Gaps may take the form of short trail segments, as yet uncompleted, linking longer segments that serve larger populations or longer trail segments that have yet to be developed.

Redeveloping Important Corridors: some trails are decades old and reaching the limit of their capacity to handle many users efficiently and safely. Updated guidelines and standards now provide enhanced and safer facilities that accommodate more trail users.

Safe Bridges: the Parks Division monitors and maintains 73 bridges and trestles as part of the RTS. These structures need periodic repair or rebuilding in order to ensure their integrity and safety.

Regional Trail Development Process

Related Information

- Regional Trail Access equity information
- King County Regional Trails
- King County Bike Map
- Walking Maps in King County
- Interactive Parks Map

RTS facilities are similar to roadways — lengthy paved or compacted gravel thoroughfares running in linear open space corridors. Like roads, their development process includes planning, design, permitting, and construction. This process can take years under the best of circumstances. Many trails are located within or near sensitive habitats where development requires more unique structures, additional permitting requirements, and extensive environmental mitigation. These performance measures address both essential stages of pre-construction (planning/design/permitting), construction, and close-out.

Performance anticipated in 2009

We will track and report on upcoming Regional Trail System improvements through the lenses of proximity/system distribution, gaps, redevelopment, and bridge resiliency.

Currently 60.5% of King County residents currently live within one mile of a regional trail. This percentage continues to grow year by year, although growth may be variable due to limitations of urban development. Filling critical trail system gaps and redevelopment/upgrading trails also indicate progress, as these activities enhance the network, increase its capacity, and improve safety.

The table shows anticipated activities for 2009 and beyond in closing gaps, redeveloping/upgrading trails, and ensuring that bridges are safe for travel.

The following Regional Trails System projects are either under construction or in planning/design/ permitting stages. Activities under Target 2009 are anticipated to be completed in 2009.

Regional Trails Project Construction Activities — 2009

New Projects/Critical Gaps	Redevelopment/ Upgrade Projects	Major Bridge Projects	Lead Agency
Marymoor Connector Trail (Redmond)			King County
Green River Trail, Phase 2 (Kent)			King County
Issaquah-Preston Trail (High Point)			WSDOT
North Creek Trail (Bothell/ I405)			Bothell
	Burke-Gilman Trail (East Kenmore)		Kenmore/ King County
		Dorre Don Bridge (Maple Valley)	King County
		Griffen Creek Bridge (Carnation-Fall City)	King County
		Tolt River Bridge (Carnation)	King County

Pre-Construction Complete (2009 Design and Permiting Actions)

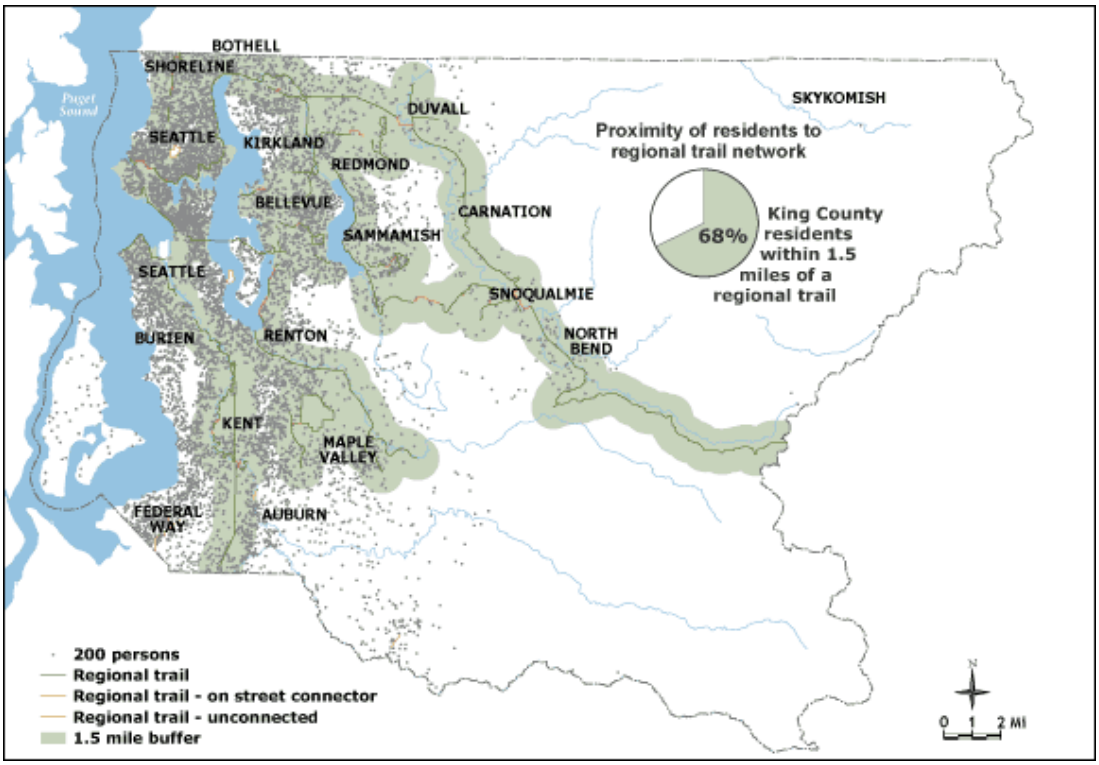
New Projects/Critical Gaps	Redevelopment/ Upgrade Projects	Lead Agency
Soos Creek Phase 5 (Renton)		King County
Soos Creek Phase 6 (Renton)		King County
Foothills Trail (Enumclaw)		King County
Two Rivers Trail (Black River) (Renton-Tukwila)		Renton/Tukwila/King County
Westside Trail (SeaTac)		SeaTac/Des Moines/King County
East Lake Sammamish Trail @ SR520		King County

(Redmond)		
	East Lake Sammamish Trail (Redmond)	King County
	East Lake Sammamish Trail (Issaquah)	King County
	East Lake Sammamish Trail (Sammamish)	King County
	Burke-Gilman Trail (Lake Forest Park)	King County
	Feasibility - Lake to Sound Trail Corridor (Renton, Tukwila, SeaTac, Des Moines)	King County

As the table indicates, a number of construction projects addressing gaps are anticipated to be completed in 2009. These include two King County's projects — Marymoor Connector and Green River trails, a WSDOT project — Issaquah-Preston Trail from High Point toward Preston; and Bothell's filling a gap on the North Creek Trail. The redevelopment of the Burke-Gilman Trail in east Kenmore should also be completed by Kenmore and King County. In addition, construction should be completed on two King County RTS bridges — Dorre Don and Griffen Creek. A third bridge over the Tolt River should be under construction but not yet completed.

Pre-construction progress includes design and permitting for new trails such as King County's Soos Creek Trail, Phases 5 and 6 to link to the Cedar River Trail; King County's Foothills Trail near Enumclaw; portions of the Two Rivers and Westside trails in south County (Lake to Sound corridor); and East Lake Sammamish Trail at SR520. Pre-construction activities should be completed for two of these projects in 2009.

Pre-construction activities for redevelopment/upgrade projects includes the development of King County's "master planned" East Lake Sammamish trail in Redmond, Issaquah, and Sammamish (distinct phases); the County's redevelopment of the Burke-Gilman Trail (Lake Forest Park); and feasibility for developing the Lake to Sound Trail corridor through Renton, Tukwila, SeaTac, and Des Moines. Pre-construction projects anticipated to be completed in 2009 are shown.



Proximity of residents to the regional trail network
2006 Findings
Click to download the PDF version.

Technical Notes

For definitions and more detail.

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PERFORMANCE MEASURES - 2008 ARCHIVE

RECREATION SERVICES PROVIDED THROUGH COMMUNITY PARTNERSHIPS

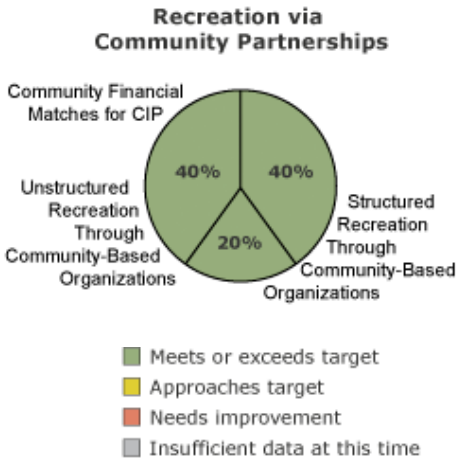
2008 Rating:

Number of users benefiting from structured recreational opportunities provided by community-base partners:

- **2007:** 12,100
- **2008:** 28,500
- **2008 target:** 28,500
- **2009 target:** 33,400

Number of users benefiting from non-structured recreational opportunities provided by community-based partners:

- **2007:** 12,500
- **2008:** 34,300
- **2008:** 34,300
- **2009 target:** 38,900



Financial match leveraged through community-base partners:

- **2007:** $2,200,000
- **2008:** $6,000,000
- **2008 target:** $6,150,000
- **2009 target:** $5,192,500

About this measure: This measure considers the success of King County Parks efforts to expand public recreation opportunities using community-based partnerships. The Community Partnerships and Grants (CPG) Program is the primary tool that Parks uses to develop community-based partnerships. This measure includes the number of public users benefiting from new community-based public recreation development projects and the amount of additional community investment leveraged for construction, operations, and programming.

Influencing factors: Factors influencing successful community-based partnerships include wherewithal of community-based organizations, flexibility in King County's CPG grant parameters, overall capital investment, availability of land for recreation development, and commitment to the comprehensive King County empowerment of community-based partner organizations.

Strategy going forward: Continue making strategic investments via the Community Partnerships and Grants (CPG) Program. Increasingly seek acquisition opportunities that support new community-based recreation development projects.

Technical Notes

For definitions and more detail.

Related Information

Community Partnerships and Grants

Propose a community project

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PERFORMANCE MEASURES - 2008 ARCHIVE

VOLUNTEERISM

2008 Rating: ⇔

Parks Division

Volunteer hours

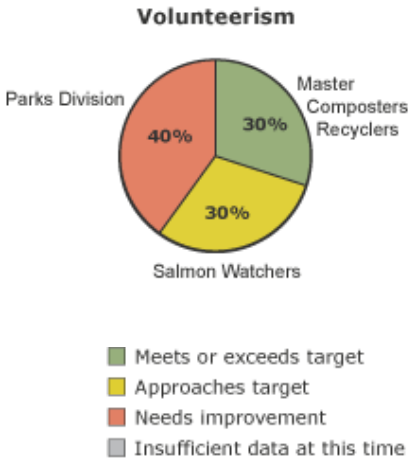
About this measure: King County Parks engages the community, educates park visitors, and provides basic enhancements to the park system and the environment through our volunteer program. In addition to the added resources volunteers bring to park projects, people leave with a greater knowledge and appreciation for the park system.

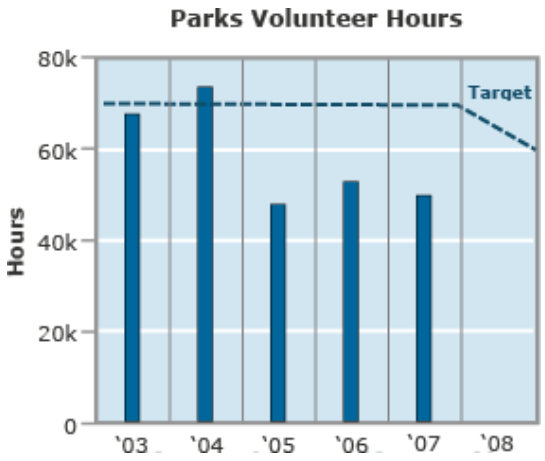
2008 results: 48,500 volunteer hours

2008 target: 60,000

2009 target: 45,000

Influencing factors: Volunteer hours declined slightly from 2007 primarily due to the temporary loan-out of the Volunteer Program Manager to the KC Animal Control & Care Shelter to assist in re-organizing their volunteer program in the face of their public pressure for change and internal budget crisis. Other factors include fewer spring school events due to order schedule of soil and seedlings at the KC Green House, and no "mega-event" to replace the previous year's Starbuck's Park Makeover at White Center Heights Park.





- The 48,500 volunteer hours for the year were provided by the incredible support of more than 6,600 caring citizens. There were over 458 events in which over 50 different groups participated.
- Volunteers planted over 13,660 native trees and shrubs at 11 King County sites. These plants are helping to restore wetlands and streams, forested floodplains and add diversity to our forests.
- Over 3,000 tree and shrub seedlings were potted up by volunteers at the Green House and Nursery for future projects.
- A record number of volunteer backcountry events occurred with 172 trail work days. These were completed at Grandridge, Soaring Eagle, Cougar Mtn., Squak Mountain., O'Grady Park, Duthie Hill Park, and Taylor Mt. Forest with the help of WTA, Backcountry Horsemen, Evergreen BTC, and others.
- The restructured Marymoor Concert Composter/Recycler volunteer project resulted in over 210 highly motivated environmentally conscientious people giving almost 700 hours at 17 concerts to help educate concert goers and divert recyclable and compostible items out of the waste stream.

Related Information

- King County Volunteer page
- The Dirt: DNRP Calendar of Events
- Volunteer at King County Parks
- Salmon Watchers Program
- Salmon Watcher Program, Training Slideshow

Strategy going forward: The program will continue its efforts to build upon increasing volunteer recruitment by focusing on key volunteer program elements such as improving and increasing volunteer recognition (two new items will be used in the first quarter of 2009); strengthening existing partnerships with communities and organizations while building new ones (this has begun with increased communications and expanding staff skill-sets through trainings:; and developing more consistent messaging and advertising (the new website will allow for easier and more efficient changes to the volunteer web page). The program's target has been overly ambitious in the past and a new target of 45,000 will be set for 2009 that is more realistic yet motivates and challenges staff to obtain. One of the reasons that it will be lower is that the King County Fair is being transferred to the City of Enumclaw, which normally results in thousands of hours of volunteer time.

Solid Waste Division (SWD)

About This Performance Measure: This measure represents the number of volunteers trained by the Master Recycler Composter Program each year. The volunteers receive free training in waste prevention, recycling, home composting and alternatives to household hazardous wastes. In return, participants agree to share their knowledge and skills through various community outreach efforts.

2008 Results: 29

2008 Target: 25

2009 Target: 25

Influencing Factors: Training recruitment was the same in 2008 as it had been in 2007.

Strategy Going Forward: Recruitment for the 2009 training will target residents interested in providing outreach in curbside and food scrap recycling in South King County.

Water and Land Resources Division (WLRD)

Salmon watcher program

About this measure: Salmon Watcher is a multi-jurisdictional effort focused at protecting a Pacific Northwest treasure and educating the community in the process. The thirteen year old program involves volunteers watching streams for spawning salmon in King and Snohomish Counties. This effort mainly focuses on waters within the Lake Washington watershed.

2008 results: 119 sites on approximately 49 streams were watched in 2008.

2008 target: 130 sites on 55 streams

The number of sites and their locations vary from year to year. For example, in 2007, 134 sites were watched on streams. As of 2008, a total of 432 sites on approximately 145 streams have been watched in the program to date. Additionally, since we started collecting information on citizen contacts in 2001, volunteers have talked with nearly 8,000 citizens at their stream sites.

2009 target: 130 sites on 55 streams

Influencing factors: The Salmon Watcher program is voluntary and new watchers enter the program upon their interest and request. Budget allocations and proactive recruitment of watchers can influence how many and the location of monitoring locations.

Strategy Going Forward: Continuing to educate property owners with salmon streams on their property by participating in the program about things they can do to improve aquatic habitats.

Technical Notes

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PERFORMANCE MEASURES - 2008 ARCHIVE

CUSTOMER SATISFACTION

2008 Rating:

About this measure: Customer service is a cornerstone of good performance. DNRP uses customer feedback mechanisms to:

- Understand changes in customer preferences, priorities and price sensitivities
- Assess program strengths and weaknesses and perceptions of service levels
- Guide program adjustments based on finding

Many of our larger programs have had customer feedback mechanisms in place for several years. The customer survey findings are used to steer program adjustments and ensure that changes produce the intended results.

For the most part, DNRP divisions have selected specific groups of customers or neighboring business and residents to survey about services and programs. Some of our customer service questionnaires are self-administered and others involve the use of consumer research firms.

Solid Waste Division (SWD)

Transfer station customers

2008 Results: 4.69 (on a 1 — 5 scale where 5 is excellent)

2008 Target: 4.5 (on a 1 — 5 scale where 5 is excellent)

2009 Target: NA. There will be no transfer station customer satisfaction survey in 2009.

Influencing Factors: Transfer station customer satisfaction was high due to continued good service at the transfer stations.

Strategy Going Forward: The same high level of service will continue in 2009.

Technical Notes: Surveys are ranked on a five point scale.

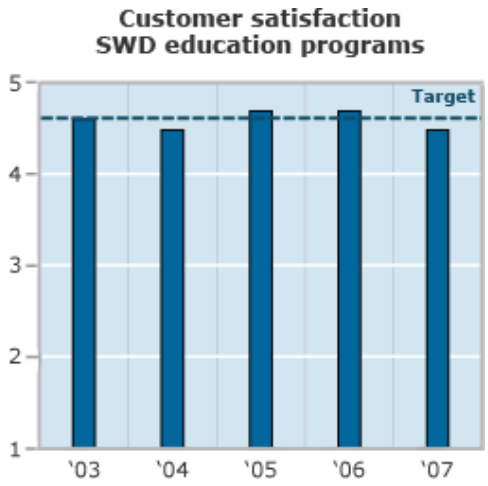
Related Information

About DNRP

About SWD

About WLR

Parks Feedback



Wastemobile customers

About this Performance Measure: In 2007, the Local Hazardous Waste Management Program (LHWMP) in King County conducted a survey of the users of its household hazardous waste (HHW) collection facilities. Visitors provided information about their satisfaction levels with the current hazardous waste disposal services. Information was gathered at the Program's three fixed facilities (located in North Seattle, South Seattle, and at the Factoria transfer station) and at Wastemobile collection events held in the cities of Issaquah and Kent.

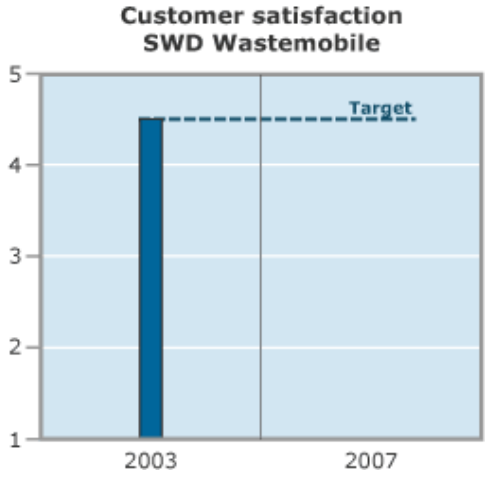
2008 Results: There was no survey in 2008.

2008 Target: NA.

2009 Target: 4.0 (on a 1 — 5 scale where 5 is excellent)

Influencing Factors: NA.

Strategy Going Forward: The LHWMP is currently conducting a service level study to enable the county to enhance or maintain the high level of hazardous waste disposal service provided to King County residents.



Solid waste education program

About this Performance Measure: In the 2007 - 2008 school year, SWD reached 26,300 elementary students through an assembly program and over 18,000 elementary and secondary students through classroom workshops. Teachers find the program and workshops to be highly effective in educating students about how reducing waste and recycling benefit the environment. The question teachers respond to in the survey is whether they think the assembly/workshops "enhance student understanding of resource conservation."

2007 - 2008 Results: 4.58 (on a 1 — 5 scale where 5 is excellent)

Influencing Factors: The overall rating rose slightly from 4.48 in 2007 to 4.58 in 2008. This increase could be attributed to the implementation of a new assembly program in 2008 and to the fact that

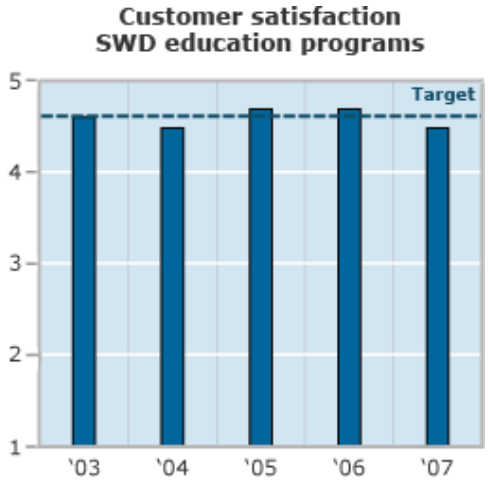
workshops are adjusted each year based on teacher feedback.

Strategy Going Forward: SWD will continue to offer its assembly and workshops to schools, updating content for relevancy to department and division goals as well as to appropriateness to grade level and Washington State grade level expectations.

Technical Notes: Surveys are ranked on a five point scale.

2008 - 2009 Target: 4.6 (on a 1 — 5 scale where 5 is excellent)

2009 - 2010 Target: 4.6 (on a 1 — 5 scale where 5 is excellent)



Water and Land Resources Division (WLRD)

WLRD Drainage Customer Satisfaction

2008 target: 90% of customer service questions are responded to favorably

2008 ressults: 90.74% of the responses were favorable (of 45 customer survey cards returned in 2008)

2009 target: 90 percent of customer service questions are responded to favorably

Influencing factors: Training and education are offered to staff when performance measures fall below goals. When a survey card records dissatisfaction with a staff member, the issue is discussed with him or her. The majority of our negative responses are due to situations where there is no program or funding to address the complaint, or the problem is referred to another agency such as DOT or the Health Department and these customer is not satisfied with that agency's response. We have also have Customer Service Card responses from residents who are disgruntled with government, taxes, property rights, etc.

Strategy going forward: Mid-2007, the division launched an on line customer services survey on its Web site and plans to send customer services surveys to people that have sent email inquiries. Information from this survey will supplement results from the drainage services survey reported here. The Storm Water Services Program improves established customer service protocols by regularly reviewing and upgrading the protocols. Staff training is conducted when protocols have changed change and as a recurring review.

Wastewater Treatment Division (WTD)

Wastewater Treatment Plant Neighbors

About this measure: This measure addresses the percent of business and residential neighbors who consider wastewater treatment plants in their area to be a good neighbor. The Near Neighbor Survey is conducted every other year; therefore no new data is available for 2008. The next survey will be conducted in 2009.

2007 results: 70.5%

2007 target: ≥ 75%

2009 target: ≥ 75%

Influencing factors: Overall, both wastewater treatment plants, West Point and South Plant, have good relationships with their neighbors. The most common reasons residents and businesses say that King County has been a good neighbor continues to be the lack of noticeable impacts of the treatment plants, considering factors such as visibility of the facilities, odor, truck trips, landscaping, environmental impact and responsiveness to community concerns. "Bad smell" is the most common negative impact that nearby residents experience. Trucking impacts are the second highest concern.

Strategies going forward: The top two priorities continue to be exploring new methods of odor control and responding to complaints within 24 hours.

WTD Customer Service Satisfaction by Local Sewer Agencies

About this measure: This measure tracks the degree of local sewer agency satisfaction with the customer service they receive from WTD staff, as rated in the annual Customer Feedback Survey.

2008 results: 3.9 (on a 1 — 5 scale where 5 is excellent)

2008 target: ≥ 4.0 (on a 1 — 5 scale where 5 is excellent)

2009 target: ≥ 4.0 (on a 1 — 5 scale where 5 is excellent)

Influencing factors: The Wastewater Treatment Division has had a strong trend of improvement in its customer satisfaction ratings since 2006. Higher satisfaction ratings in 2007 and 2008 may be due to the Division Director holding individual meetings with each component agency to improve communication and relationships with our component agency customers, and following up on issues of concern to the agencies. The highest rated factors making up the total customer satisfaction score were professionalism and courteousness of WTD staff, technical knowledge of staff, and staffs' knowledge of administrative procedures and requirements.

Strategies going forward: WTD will evaluate the complete results from the 2008 customer feedback survey, and evaluate any areas where needs for improvement are indicated. Through follow up with the customer agencies, WTD will identify actions to be implemented to make improvements and further increase customer satisfaction with WTD overall.

Technical Notes

For definitions and more detail.

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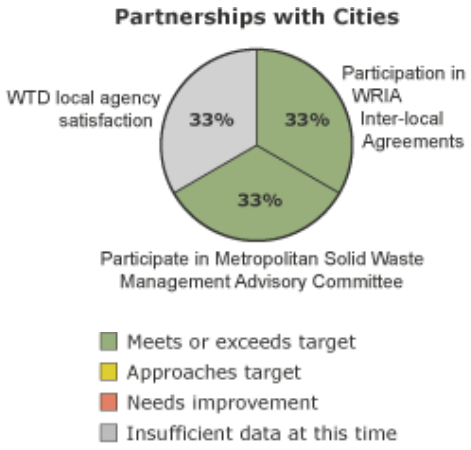
PERFORMANCE MEASURES - 2008 ARCHIVE

JURISDICTIONAL PARTERSHIPS

2008 Rating: ⇔

Water and Land Resources Division (WLRD)

Number of Signers/Partners to Salmon Recovery Inter-local Agreements



About this measure: This measure tracks the number of member governments (including jurisdictions, tribes and King County) that have signed inter-local agreements (ILAs) for salmon recovery plan implementation. Partners that sign inter-local agreements for salmon recovery are organized around state-defined geographical areas called Watershed Resource Inventory Areas (WRIAs). ILA partners work together to implement salmon recovery in their river basins. They also cost-share on WRIA coordination services provided through King County. Some governments, including King County, span more than one WRIA and are thus party to more than one inter-local agreement. In such instances they are counted multiple times to reflect the number of agreements they participate in and pay into.

Status: There are 50 eligible ILA partners within King County's three participating WRIAs (WRIA8, WRIA9 and WRIA7/Snoqualmie Watershed). As of 2008, all 50 potential partners have signed inter-local agreements.

Target: We are currently at full participation. Our target going forward is to retain all 50 partners.

Influencing factors: King County's reputation as a service provider and partner in delivering services is crucial toward the success of this measure. Other jurisdictions and Indian Tribes are less likely to sign agreements to work with the county and cost share on salmon recovery coordination services if the county cannot deliver the services it has agreed to. Additionally, it is critical to have the continued regional political focus on the importance of salmon recovery and watershed protection in the Puget Sound region.

Strategy going forward: King County will continue to demonstrate quality service and success in delivering the cost-shared inter-local work. Future strategies include integrating with regional Puget Sound Partnership actions, advocating regional implementation of salmon recovery plans, and facilitating the development of funding sources for watershed protection and restoration activities.

Solid Waste Division (SWD)

Number of cities that participate in the Metropolitan Solid Waste Management Advisory Committee (MSWMAC)

About this measure: This committee advises the DNRP Solid Waste Division on key regional issues.

2008 Results: 22

2008 Target: 18

Related Information

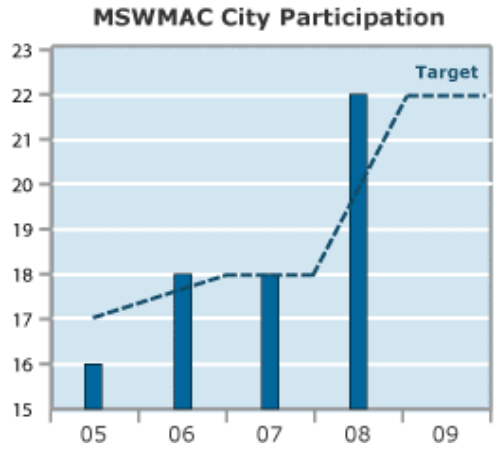
- Salmon Recovery
- IRAC - Interagency Resource for Achieving Cooperation
- Join IRAC
- Puget Sound Fresh
- Groundwater Protection
- Become a Parks Partner
- Northwest Natural Yard Days
- Groundwater home page
- The Groundwater Story
- Map of Groundwater Management Areas
- Information about King County's Groundwater Management Areas
- WRIA information

2009 Target: 22

Influencing Factors: Cities are participating because there are important issues being discussed, including an update to the 2001 Comprehensive Solid Waste Management Plan.

Strategy Going Forward: The Division will continue to collaborate with MSMWAC in 2009 as the Division issues a draft of the updated Comprehensive Solid Waste Management Plan and on other issues, such as the update of the Cedar Hills Landfill site development plan.

Technical Notes: MSWMAC was created to advise the Executive, the Solid Waste Interlocal Forum and the King County Council in all matters relating to solid waste management and to participate in development of the transfer and waste export system plan.



Wastewater Treatment Division (WTD)

Local Jurisdiction Partnerships

Quality of Contract Services Rated by Local Agencies

About this measure: This measure tracks local sewer agency satisfaction with the quality of their contract services with WTD, as rated in the annual Customer Feedback Survey.

2008 results: 3.29

2008 target: ≥ 4.0 on a 1-5 scale

2009 target: ≥ 4.0 on a 1-5 scale

Influencing factors: Ratings for this measure have fluctuated from year to year since 2005, showing no clear upward or downward trend. In any particular year there may be specific factors or activities underway by the division that influence the local agencies' satisfaction with the contract services they receive from WTD. In 2006 a low score of 3.29 was received, which was likely attributed to the negotiations of contract extensions that were underway at the time with the local agencies. In 2007 the score rose to 3.62, which may have reflected the positive outreach efforts taken by the new Division Director, who visited individually with each of the local agencies to discuss their concerns and hear their ideas. In 2008 the low rating of 3.29 may be attributable to somewhat controversial program initiatives and projects that are underway, such as construction of the Brightwater Treatment Plant, and the development of a Reclaimed Water Comprehensive Plan.

Strategies going forward: While ratings of satisfaction with wastewater contract services fluctuates from year to year, WTD continues to maintain open dialog on all major projects and initiatives with the contract customer agencies via the Metropolitan Water Pollution Abatement Advisory Committee (MWPAAC) and its technical and financial subcommittees, which regularly meet with WTD staff and management to provide input to WTD operations, finances and capital programs and projects. WTD continually aims to improve relationships, trust and open communication with its customer agencies.

Local Agency Satisfaction with the MWPAAC (Metropolitan Water Pollution Abatement Advisory Committee) Process

About this measure: This new measure, created in 2008, provides feedback to WTD on the level of satisfaction among our local agency customers with their participation in MWPAAC, an advisory

committee of local sewer agencies. Data for the measure comes from the annual Customer Feedback Survey, and the score is rolled up from several questions that gather feedback about the quality of meetings, the quality of information received from the WTD Director and staff, the opportunity to express opinions, needs and concerns, and the ability to obtain needed information from the division.

2008 results: 3.67

2008 target: ≥ 4.0 on a 1-5 scale

2009 target: ≥ 4.0 on a 1-5 scale

Influencing factors: This measure now has two years of data collected from the annual Customer Feedback Survey. The score increased from 3.44 for 2007 to 3.67 for 2008, showing an increase in overall satisfaction with the quality of MWPAAC meetings and the quality of information received from WTD's Director and staff on important programs, projects and initiatives. Factors such as the quality of Director's reports, the ability of the local agencies to express their opinions, needs and concerns, and the ability to get the information they need from WTD were rated the highest. Factors such as meeting location and length received lower ratings, with concerns about parking availability commonly noted on the survey form.

Strategies going forward: WTD continually seeks ways to improve MWPAAC meetings, to make them as productive, useful, informative and convenient as possible; and to provide reports and information in a timely and thorough manner to the local agencies. In the past two years, WTD has restructured the format of meetings and added a professional facilitator. In 2009 WTD will change the location, time, and duration of the monthly meetings to increase convenience for most attendees. Balancing a central location with traffic and parking concerns is a key consideration, as attendees must drive from all parts of the County's sewer service area, including some who come from Snohomish County in the north and as far south as Auburn and Algona, to attend the meetings.

Technical Notes

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PERFORMANCE MEASURES - 2008 ARCHIVE

EMPLOYEES

2008 Rating: ⇔

About these measures: These measures look at the degree that targets are met for employee workplace practices and safety factors. The employee survey ratings detail trends in employee views on workplace practices, effectiveness, accountability, resource management and satisfaction. Employee accidents and lost time information are tracked by Human Resource personnel and help inform priorities for procedure and equipment improvements as well as training and safety education.

Ratings from 2008 employee survey

Satisfaction Index: 3.63 on a 1-5 scale, 5 as best

Workplace Practices Index: 3.18

Availability of Resources Index: 3.58

Role of Employee Index: 4.04

2008 employee rating targets

Satisfaction Index: 3.75 on a 1-5 scale, 5 as best

Workplace Practices Index: 3.5

Availability of Resources Index: 3.75

Role of Employee Index: 4.2

Most ratings were similar to prior years, although employees rated the following statements more favorably in 2008 than in prior surveys:

"Employee are held accountable for their performance at work," and

"Overall, I'm satisfied with the level of involvement I have in decisions that affect my work."

Influencing factors: Overall, the ratings of DNRP employees on these survey questions have remained steady since the survey was first conducted in 2000. The slight increase in ratings for the accountability question is likely a result of an increased focus on supervisory responsibilities and addressing employee performance and behavior. Improvements in supervisory skills, labor relations and perceptions of fairness have likely contributed to the improved rating on the job satisfaction question.

Strategy going forward: DNRP's Human Resource work plans continue to focus on strengthening performance management, accountability, supervisory development and collaborative relationship with unions. This focus was developed in response to the concerns and perceptions expressed

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through prior employee surveys.

2008 employee safety results

2008 results: Total incidents with injuries: 164

Average days lost per injury: 13.2

2008 targets: Total incidents with injuries to fewer than 175

Average days lost per injury: 16

Influencing factors: 2008 was a positive year for accident and injury reduction. We are seeing positive trends in measurable areas of health and safety, in large part due to investments in safety education, training and process improvements.

DNRP has almost 1,800 regular employees, many of whom perform challenging tasks, including operating and maintaining complex infrastructure systems that run continuously, such as wastewater treatment plants and a wide variety of heavy machinery. Employees also respond to floods, chemical spills and illegal dumping, while monitoring conditions in deep woods, fast-flowing rivers, high peaks and in Puget Sound.

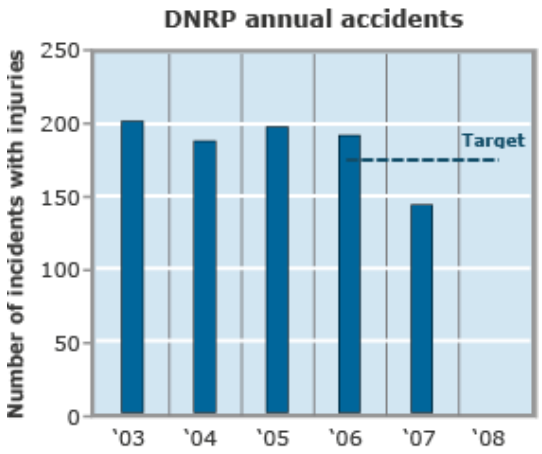
The decline in lost days due to injuries can be in part attributed to increasing light duty assignments for injured employees, procedure and equipment improvements, and increased safety ethic among field employees.

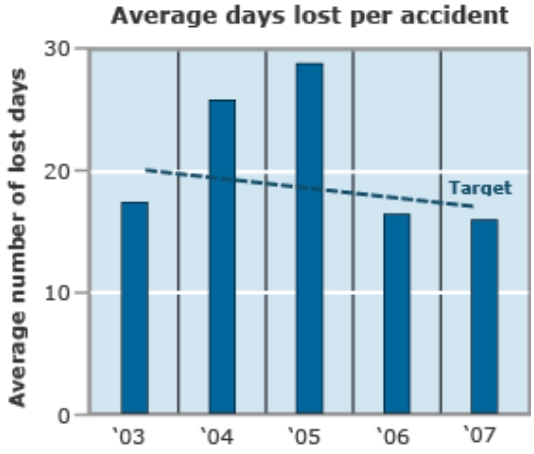
The aging of DNRP's workforce also affects future workplace accidents and injuries; as employees age, many of the physically demanding jobs create the likelihood of work-related injuries and chronic conditions.

Strategy going forward: DNRP will continue to foster a safety ethic and make safety training a high priority. Emphasis will be placed on training related to safe procedures when performing tasks that lead to slip/trip hazards, or can create repetitive stress injuries. The King County Healthy Incentives program is instrumental in promoting a healthy lifestyle, which translates to employees who are more capable of performing physically demanding jobs.

At the line operation level, we will advance out comprehensive approach to safety, with the following 5 focus areas:

1. **Build visible safety** by addressing safety issues as they arise, in planning, new equipment selection, project management.
2. **Act on the three P's:**
    a. Preparation (and planning)
    b. Processes (policy and procedures, task lists, check lists)
    c. Prevention (identifying and correcting hazards before they become incidents).
3. **Correct unsafe behavior** when it happens
4. **Correct unsafe conditions** and known hazards quickly
5. **Review all accidents** with long-term elimination of accidents in mind.





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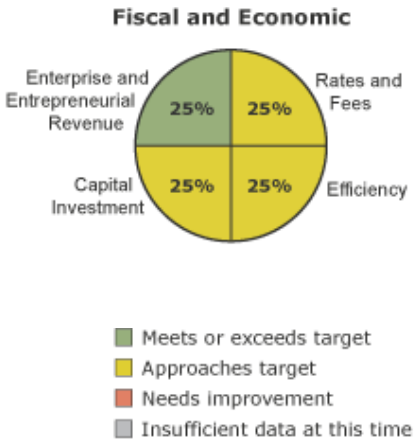
PERFORMANCE MEASURES - 2008 ARCHIVE

FISCAL AND ECONOMIC

2008 Rating:

This roll-up measure summarizes the degree DNRP is achieving its **Fiscal and Economic goal**:

Support King County's economic development goals and ensure ratepayer value through effective, efficient and equitable program implementation.



2008 results

DNRP's rating for the performance measures that support this goal is a yellow — signifying results are within 10 of target.

Areas under this goal where DNRP performed well:

- Entrepreneurial and Enterprise revenue.

Areas under this goal where DNRP performance approaches target:

- Rates and Fees
- Efficiency
- Capital Investment

Key influencing factors

Since 2002, the Parks Division has been empowered to engage in "good-government" initiatives and embrace non-traditional ways of doing business. This transformation from a centrally funded service provider to an entrepreneurial, performance-driven organization has help ensure that parks serve to enhance communities and the region's high quality of life, even during tight fiscal times.

The Wastewater Treatment Division has developed a productivity initiative pilot program, a joint labor and management effort within the division that could save ratepayers as much as $67 million over 10 years. The pilot program allows employee flexibility to apply some business practices used in private industry to cut operating costs, increase productivity and continue a high level of service and environmental protection for county residents.

The Solid Waste Division has evaluated a range of options to increase efficiencies in support of stable rates. Transfer stations have been reconfigured to reduce staffing requirements, while outreach and partnership efforts have led to higher levels of residential recycling and lower residential solid waste volumes.

Strategies going forward

All DNRP divisions will continue to explore and implement opportunities to increase operational

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efficiencies. Capital investments are being made with an eye toward energy efficiency and reducing operations and maintenance costs.

The Wastewater Treatment Division has expanded its pilot productivity initiative to include capital projects. The Solid Waste Division has plans to reduce contracting costs by bringing recyclable materials hauling in-house, while the Parks Division will continue building partnerships to enhance revenue generation and reduce operation and maintenance costs.

DNRP is enhancing training efforts to further build workforce capacity.

More information about King County's Efficiency, Rates and Fees, Employees, and Entrepreneurial Revenue is available by continuing to the pages for these measures:

- Rates and Fees
- Efficiency
- Capital Investment
- Entrepreneurial Revenue

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PERFORMANCE MEASURES - 2008 ARCHIVE

RATES AND FEES

2008 Rating: ⇔

About this measure: DNRP seeks to minimize rates and fees while maximizing value of service. Major programs track rates and fee against the level of inflation and benchmark against similar service providers. For inflation, we look at changes in the consumer price index over a 10 year time horizon.

Because benchmarking against similar service providers and jurisdictions is time intensive, this is done only every other year for most of our programs. Comparative programs are selected for proximity, range of services, and relative cost of doing business.

Wastewater Treatment Division (WTD)

Monthly residential wastewater service fee increases vs. Consumer Price Index increases

2008 Wastewater Rate: $27.95

2008 Target: rate if it had risen by rate of inflation from the 1998 rate: $25.60

Difference: 9.2 percent

Influencing factors: WTD is in a period of major construction activity as it invests in future service, including construction of the Brightwater treatment plant and its conveyance system.

Strategy going forward: WTD has been implementing a productivity initiative to reduce operating costs and reduce future rate pressure. The rate was held at $27.95 for 2007 and 2008. The new two-year rate for 2009-2010 will be $31.90.

WTD Rate vs. comparable agencies (grey)

Rate comparisons provide qualitative information. There are no targets established for this measure. The wastewater service rate in 2008 was lower than the average of fees from other jurisdictions but higher than the median.

There are significant differences among these utilities in the extent and level of services they provide. For example, some may not provide full secondary treatment or recycle biosolids as extensively as King County does. Additionally, the division is in a period of major construction activity as it invests in future service, including construction of the Brightwater treatment plant and its conveyance system.

WTD has implemented a productivity initiative program aimed at reducing operating costs and increasing savings to ratepayers. The productivity initiative allows employee flexibility to apply business practices used in private industry to cut operating costs, increase productivity, and continue a high level of service and environmental protection for county residents.

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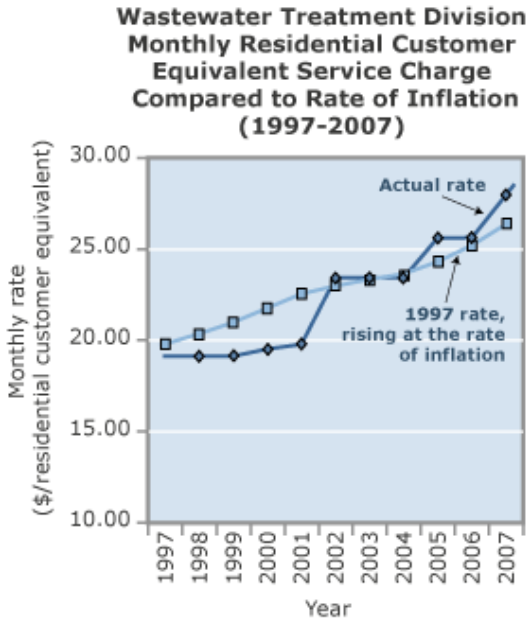
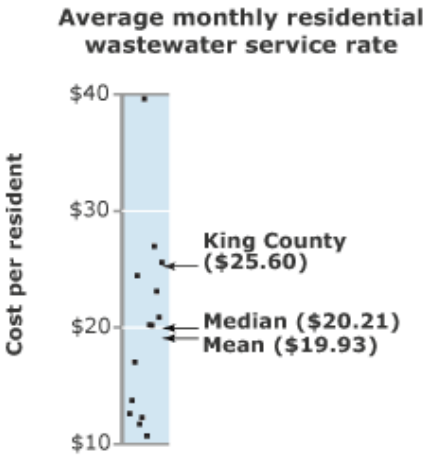




Solid Waste Division (SWD)

Solid Waste Division tip fee compared to rate of inflation

2008 Results: The Solid Waste Division tip fee was lower in 2008 than if it had risen at the rate of inflation over the last 10 years.

2008 Target: For SWD rates to be lower than if they had risen at the rate of inflation over the last 10 years.

2009 Target: For SWD rates to be lower than if they had risen at the rate of inflation over the last 10 years.

Influencing Factors: The tip fee was $95.00 in 2008 (as this was the first year in the new three-year rate period approved in 2007 by the Metropolitan King County Council) but the rate was still lower than if it had risen at the rate of inflation over the last 10 years.

Strategy Going Forward: The tip fee is currently expected to remain at $95.00 through 2010. Tons processed are expected to remain low over the next several years compared with 2007, partly due to the Division's success in promoting recycling, and partly due to the declining economy.

Comparison of fees and rates with other agencies that provide comparable services

2008 Results: As of December 2008, the King County solid waste tip fee of $95.00 per ton was below the mean ($104.54) and the median ($102.05) of the tip fees of seven comparable jurisdictions (including King County).

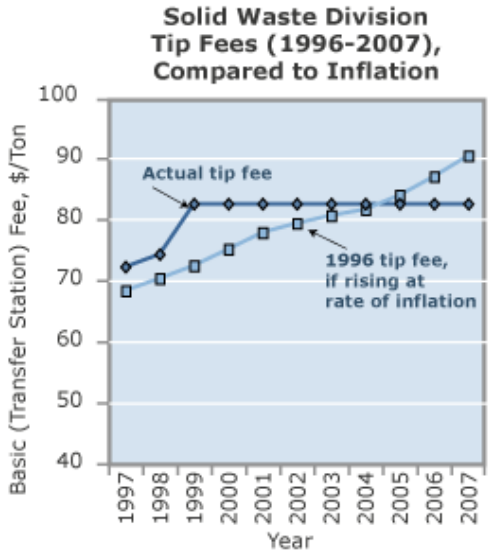
2008 Target: For the solid waste tip fee to continue to be below the mean and the median of other, comparable jurisdictions.

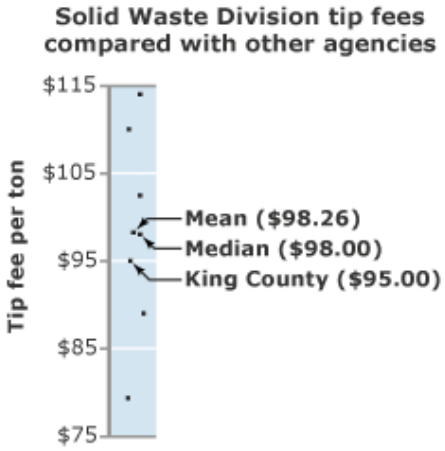
2009 Target: For the solid waste tip fee to continue to be below the mean and the median of other, comparable jurisdictions.

Influencing Factors: SWD rates increased in 2008, but stayed low, relative to the rates of other jurisdictions.

Strategy Going Forward: The solid waste tip fee is currently expected to remain at $95.00 through 2010.

Technical Notes: The mean and median for this measure were calculated using the flat, base rate without fees and taxes. In addition, the residential and not the commercial or non-resident rates were used.





Water and Land Resources Division (WLRD)

Comparison of surface water management fees with inflation

About this measure: This measure tracks compares surface water management fees compared to inflation rates over the last 10 years.

2008 Results: Surface Water Management fees have risen less than the rate of inflation. In 2007, the King County Council approved an increase to the surface water management fee, bringing up the annual charge to $111 per residential parcel. The increase raised revenue to compensate for the eroding effects of inflation. Since 2002, inflation based on CPI has increased by an estimated 15%. King County Office of Management and Budget projections suggest that inflation will rise by another 5.4% through 2009.

2008 target: Increase surface water management fees at a rate commensurate or no more than inflation. No rate increase has been proposed since 2007.

Influencing factors: Many factors drive changes to rates and fees, including storm events that induce flooding and other natural disasters, changes in the economy, additional development, demands for natural resource management services, increased regulatory requirements and changes to the rate base.

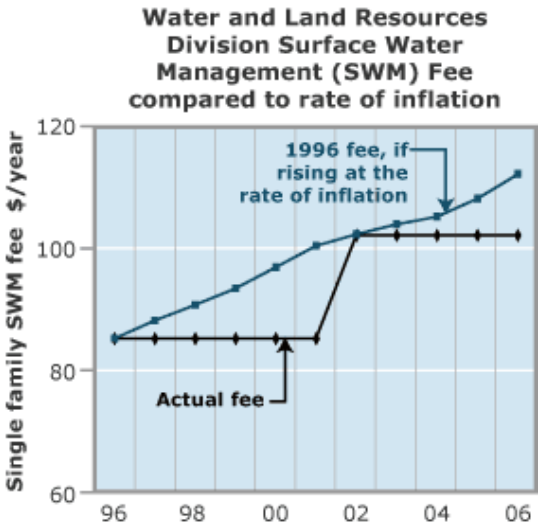
Strategy going forward: Surface Water Management Fees were raised in 2007 to meet impacts of inflation however regulatory costs (related to compliance with the National Pollutant Discharge Elimination System Permit) are increasing while Surface Water Fee revenue is decreasing due to annexations and incorporations. Making surface water activities more efficient while prioritizing how surface water revenues are spent will be important tasks for the Water and Land Resources Division over the next several years.

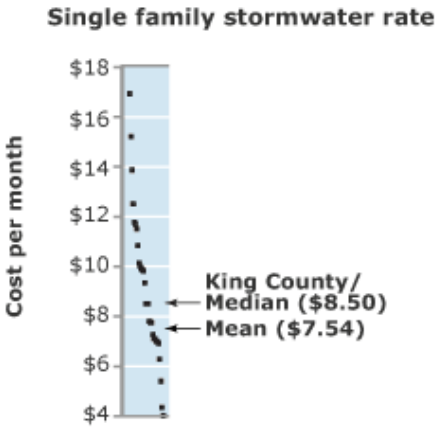
Surface water rate vs. comparable agencies

2007 Results: King County's surface water management fees are less than both the average and the median of what other incorporated, cities and towns, in King County charge.

Influencing factors: King County offers one of the most robust surface water management programs in the region. As a large jurisdiction it is governed by Phase I of the National Pollutant Discharge Elimination System Permit by the State Department of Ecology to comply with the federal, Clean Water Act. Permit requirements this and for the next six years are more stringent as the state is grappling with declines in the health of its surface waters and the Puget Sound.

Strategy going forward: Much work is being done to determine how to comply with regulatory requirements amidst dramatic declines in revenue. Stormwater services will look to making its operations more efficient and King County managers, the Executive and the Metropolitan King County Council will be faced with finding alternative funding sources or eliminating programs previously funded by the surface water management revenues.





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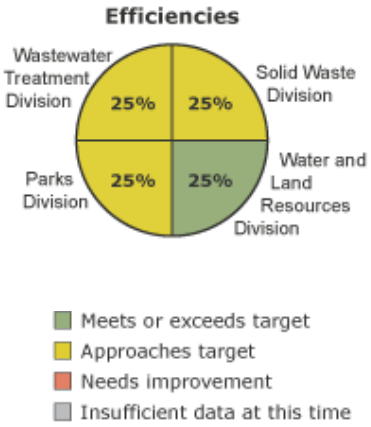
PERFORMANCE MEASURES - 2008 ARCHIVE

EFFICIENCY

2008 Rating: ⇔

Wastewater Treatment Division (WTD)

Cost per pound of Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS) removed



About this performance measure: WTD measures efficiency in terms of operating costs per pound of Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS) removed during the treatment process. BOD and TSS are the primary pollutants that the treatment process is designed to remove, and these pollutants are directly monitored in the plants' water quality permits.

2008 Results: $0.3537

2008 Target: (adjusted for inflation) = $0.3365

Influencing factors: Steps taken through the productivity initiative have helped WTD achieve operational efficiencies represented by this measure.

Strategy going forward: WTD will continue to seek reductions in operating costs through its productivity initiative while maintaining high quality standards and service delivery.

Solid Waste Division (SWD)

Transfer station operating costs per ton of solid waste.

About This Performance Measure: This measure represents the total operating costs of the Solid Waste Division's 10 geographically dispersed transfer facilities (eight transfer stations and two drop boxes) per ton of solid waste disposed.

2008 Results: $13.11

2008 Target: $12.39

2009 Target: $12.97

Influencing Factors: A major cause of this measure being above the 2008 target is the 5% reduction in total transfer tons received last year. In contrast to this per-ton figure, the actual operating costs at the transfer stations only increased 2.4% over the year. While the economic environment is a major factor in the tonnage reduction, some of this change is due to our continued efforts to encourage greater recycling and waste reduction.

Strategy Going Forward: Management will continue to operate in the most efficient manner to control operating costs, including labor, wherever possible, while assuring the safety of both

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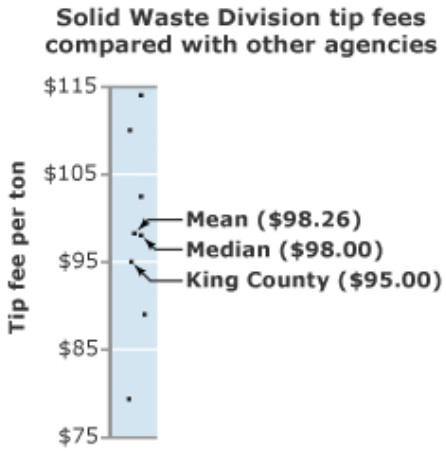
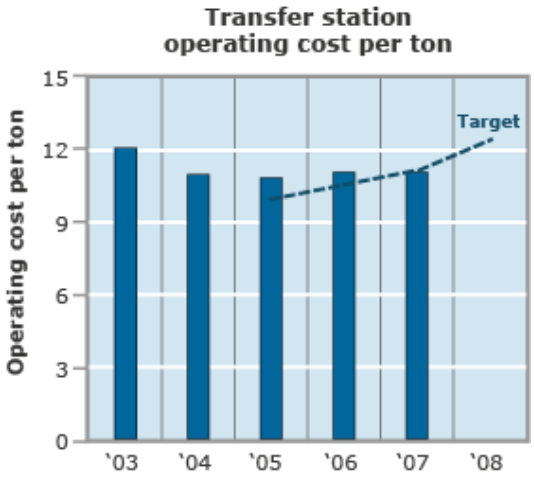
employees and customers at the transfer stations.

Technical Notes: SWD's operating costs include labor expenses for transfer station facility staffing (Transfer Station Operators and Scale Operators); utilities; and equipment repair, maintenance and replacement. This measure is calculated by dividing the total transfer station operating costs by the transfer tons. The cost per ton does not include transport of waste to the Cedar Hills Regional Landfill.





Water and Land Resources Division (WLRD)

Efficiency Measures

About this measure: Water and Land Resources administers programs funded from over forty different sources, making it impossible to quantify a single all-encompassing efficiency measure. These two measures address efficiency within two key revenue sources Ð surface water management and the noxious weeds program.

Noxious Weeds

About this measure: Over the past two years, the Noxious Weeds Program has seen a reduction in the cost per unit area of noxious weed infestations controlled. This is because a larger area of noxious weeds has been kept under control.

Noxious Weed Program expenditures / area of infestations controlled = cost per unit area infestations controlled

2007 results: $13.59 per square foot of noxious weeds area controlled

2008 results: 11.55 cents per square foot of noxious weeds area controlled

2008 target: 12 cents per square foot of noxious weeds area controlled

2009 target: 12 cents per square foot of noxious weeds area controlled

Influencing factors: Efficiency gains can be explained by a number of elements of the noxious weed program strategy including: 1) Greater use of voluntary citizen weed control compliance achieved by education and outreach activities rather than more expensive enforcement-based approaches, 2) Focus on prevention of , and early detection/rapid response to new infestations, which avoids or substantially reduces control costs, and 3) utilizing and continually refining more cost-effective integrated pest management control techniques . Economies of scale also contributes because it is cheaper to keep fewer, larger infestations under control than a multitude of smaller ones. In 2007, 7072 infestations covering an area of 9,218,187square feet were controlled. In 2008, 7250 infestations covering an area of 11,575,058 square feet were controlled. In 2008 therefore there were only a slightly higher number of infestations covering a significantly larger area controlled.

Strategy going forward: The program will continue to focus on prevention and early detection / rapid response to avoid or further minimize the costs of controlling new infestations. Effective stakeholder

communications, education and citizen reports of infestations have much potential to help the program further gain efficiencies by increasing active community participation in noxious weed control. In addition, the program will continue to pursue new, more cost-effective weed control technologies, including biological control.

Surface Water Management -- Maintenance Cost per Facility:

About this measure: Maintaining surface water management facilities is one of the primary responsibilities of surface water fees. Costs used to calculate the efficiency of this activity include labor and mowing. Facility maintenance work is performed by King County's Roads Division in the Department of Transportation.

2008 Results: $1,184 per facility

2008 Target: $1,200 per facility

2009 Target: $1,255 per facility

Influencing factors: Negotiating labor practices, severe rain events, and annexations all influence cost of maintaining surface water management facilities. Addition factors include the availability of maintenance staff with the Roads Division at the Department of Transportation, since the alternative is contracting vendors for this maintenance, which is more expensive.

Strategy going forward: This measure does not account for differences in maintenance schedules and demands that vary by facility type, age and design. Discussions will continue as to how a new measure or series of indexed measures could be developed to provide a more accurate picture of facility maintenance costs and efficiencies.

Parks Division

Ratio of employees to acres maintained

About this measure: This efficiency measure is a ratio of the number of acres in parks inventory maintained to the number of full-time employees in the Resource Section.

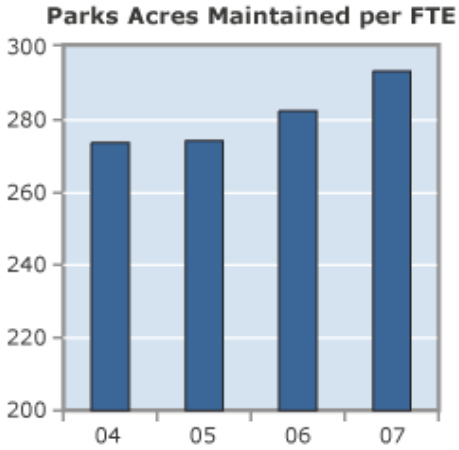
	FTEs	Acres	Acres to FTE
2008 Target	101	26,176	259
2008 Actual	96	25,703	268
2009 Target	96	26,500	276

Influencing factors: The division made an initial increase of FTEs in 2008 to improve maintenance to pre-2002 levels, which was a key policy direction with the 2008-2013 Parks Levy. Because staffing levels and land inventory are fairly stable and predictable from year to year, the main influencing factors impact the quality and type of maintenance Parks staff are able to perform. Influencing factor include:

1. Public and employee safety (for example: injury may result if maintenance action not taken);
2. Mandated requirements subject to potential fines if not performed (for example: various required permits, sensitive areas protection, ESA, integrated pest management, drainage maintenance);
3. Scheduled (revenue generating) use of park assets (for example: athletic leagues, picnics, weddings, large special events, revenue would be lost if maintenance action is not taken);
4. High community expectations and visibility projects (for example: East Lake Sammamish Trail, new athletic fields or community centers);
5. Storm damage and other natural event problems to the park system;
6. Preserve and protect projects (for example: roof repairs or field maintenance, if not done, further damage occurs); and
7. Unscheduled public use (for example: trail use, drop in athletic play, dog-off leash use).
8. The economy: Parks is hard hit by the current, unprecedented economic downturn. All Parks' funding sources are strained or threatened.

Strategy going forward: Under the guidelines of the levy that expires at the end of 2013, Parks will undertake key acquisitions with a very small increase in staffing. By increasing volunteer efforts

through our programs, such as Park Ambassadors, Adopt-a-Park, and Community Partnership Grants, and continuing our partnerships with agencies, such as the Washington Trails Association and EarthCorps, we hope to improve our existing service levels. An acquisition strategy is being developed that includes identifying key properties for Parks to purchase as well as identifying funding to support the annual cost of the land management plan will be identified. This type of pre-acquisition evaluation will avoid costly liabilities, such as environmental hazards (including mine shafts, methamphetamine labs, and noxious weed infestations), and recognize existing inappropriate public uses, which may require costly management. Staff will also expand its reach for grants and other revenue sources for natural lands.



Technical Notes

For definitions and more detail.

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PERFORMANCE MEASURES - 2008 ARCHIVE

CAPITAL INVESTMENT

2008 Rating:

About this measure: DNRP invests significant financial resources into system improvements of the natural and built environment. The Wastewater Treatment Division is focusing capital investments on increasing reliability and expanding capacity of the wastewater conveyance and treatment system. The Parks Division has been primarily steering capital investments toward improvements in the regional trail network. Solid Waste Division capital projects have been targeting transfer stations improvement, while the Water and Land Resource Division has been investing in habitat enhancements and protecting homes and businesses from flooding.

In 2008 all King County departments were given direction for tracking the rate for achieving capital project milestones. Summary information about capital project delivery is provided below, as well as maps showing the locations of capital investments over recent years.

Wastewater Treatment Division (WTD)

Capital investment summary

About this measure: WTD tracks accomplishment of scheduled major milestones for capital projects. In response to a county wide effort by the Office of Management and Budget (OMB) to track achievement of scheduled milestones for applicable CIP projects, WTD also reports this information to OMB twice a year. The milestones are the planned completion dates for planning, predesign, final design, implementation and close out of all capital projects.

2008 results: 71% of projects met their planned completion dates for major milestones in 2008.

2008 target: 75% of projects will meet the planned completion dates for major milestones

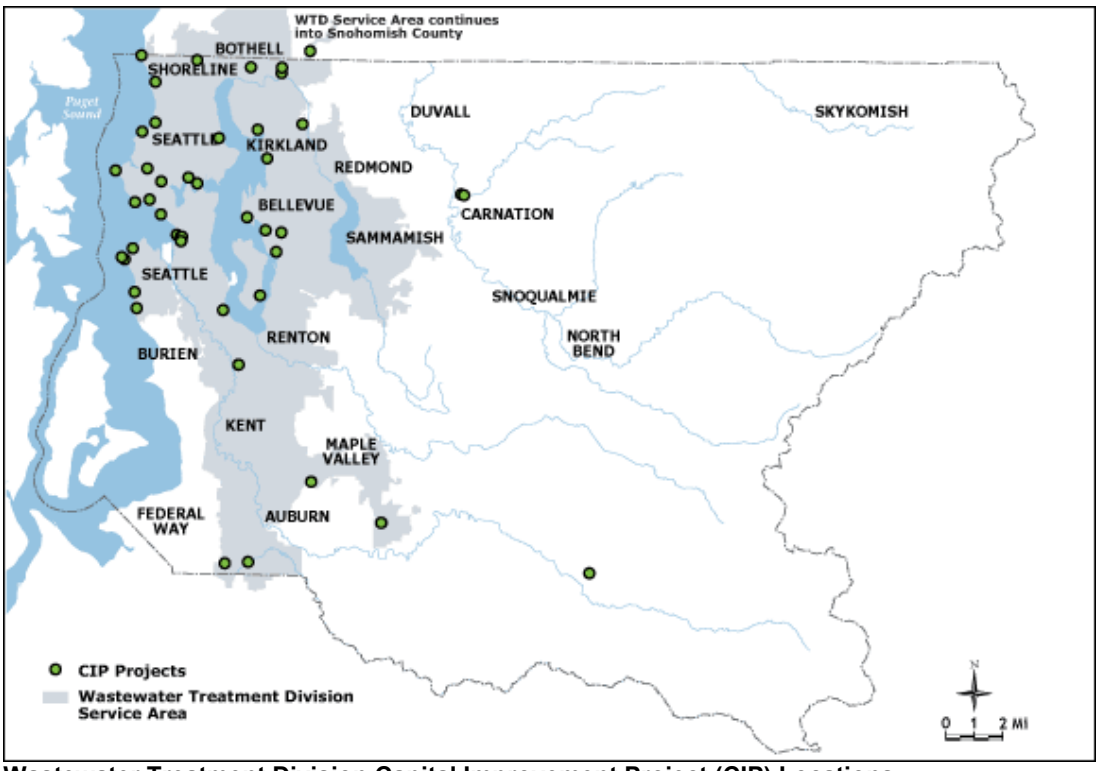
2009 target: 75% of projects will meet the planned completion dates for major milestones

Influencing factors: Scheduled project milestones entered into WTD's common project management database, Filemaker Pro, have been inconsistently maintained and updated by all project managers in the past. There have also been inconsistencies in the way individual project managers schedule milestone accomplishment dates. Therefore actual accomplishment dates for scheduled milestones have often not met the scheduled completion dates. New quarterly reporting requirements now prompt project managers to regularly check and update milestone schedules and log any reasons for schedule delays.

Strategy going forward: WTD is currently implementing a standardized project management approach based on Project Management International (PMI) standards. Increased accuracy in project scheduling is one of the key areas of focus in implementing these new project management standards. WTD project managers have taken training in PMI project management practices and will

Related Information
- Brightwater Project
- Interactive Stormwater Projects Map
- Business Plan

begin implementing these practices on their projects. This should result in higher accuracy in scheduling, and a higher accomplishment rate in meeting scheduled project milestones.



Wastewater Treatment Division Capital Improvement Project (CIP) Locations
2005 - 2007
Click to download the PDF version.

Parks Division

Capital Investment Summary

About this measure: Parks capital investments in 2007 included rehabilitating aging bridge and trestle structures to ensure continued reliability, acquisition of new right-of-way to serve as future regional trail corridors, expanding existing trails to connect missing links to serve a greater number of users in the urban and rural areas.

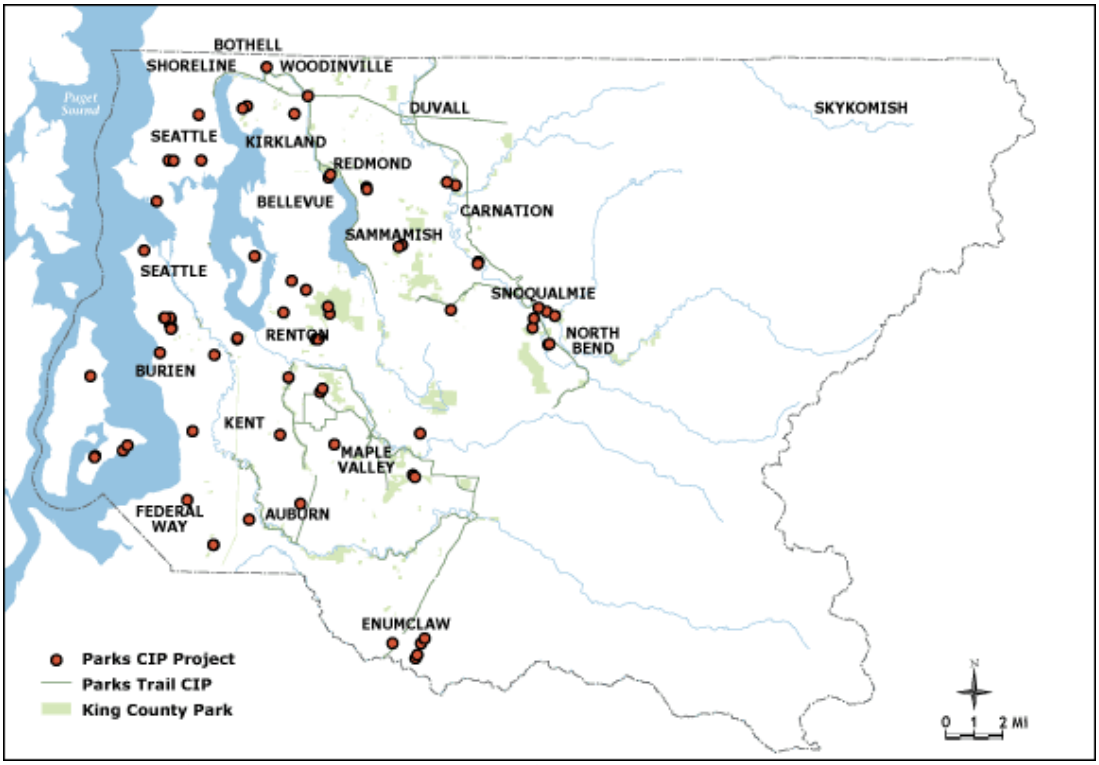
This measure tracks the degree that capital projects meet design and construction milestones

2007 results: 62.5 % of scheduling milestones met

2007 target: 75% of scheduling milestones met

Influencing factors: Challenges associated with property acquisition and permitting slowed the completion of several projects and had a significant effect on hitting project development milestones

Strategy going forward: The Parks Division, and Facilities Management Division staff who develop capital projects for the Parks Division, will continue to seek efficiencies in the design and construction process to improve the degree of capital development milestones met.



Parks Division Capital Improvement Project (CIP) Locations
2004 - 2007
Click to download the PDF version.

Solid Waste Division (SWD)

Percent of milestones achieved for Solid Waste Division capital projects

About this performance measure: This performance measure provides a snapshot of Capital Improvement Program (CIP) accomplishments. This is achieved by comparing actual expenditures for CIP projects reported in the King County Accounting Resources Management System (ARMS) with the projections for expenditures made at the beginning of the year. The target for this measure is for actual expenditures to be at least 75% of forecasted expenditures.

2008 Results: 88%

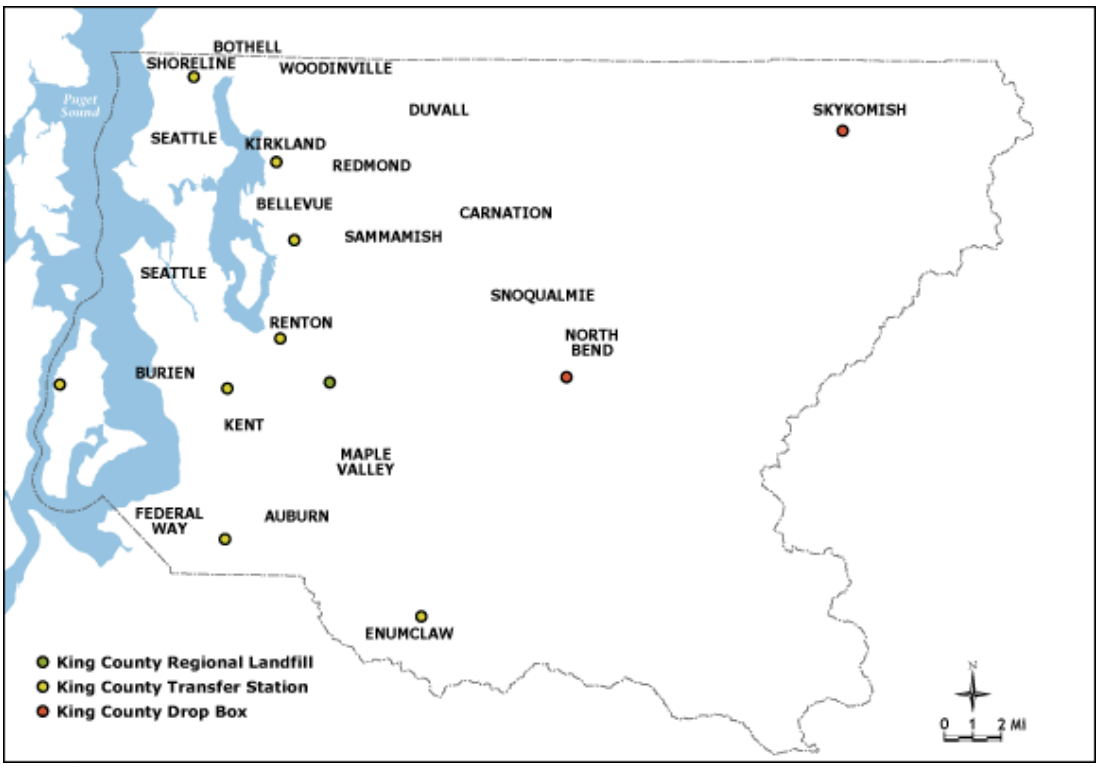
2008 Target: 75%

2009 Target: 75%

Influencing Factors: The main factor influencing the construction fund in 2008 was the reconstruction of the Shoreline Transfer Station (formerly First Northeast). Performance for the Landfill Reserve Fund in 2008 was driven by the final closure of Area 6 and development of Phase I of Area 7 at the Cedar Hills Landfill.

Strategy Going Forward: In 2009, the Division will continue to modernize the solid waste transfer system in preparation for the eventual closure of the Cedar Hills Landfill and transition to waste export. In 2009, site development will begin for the re-construction of the Bow Lake Transfer Station and construction of Phase II of Area 7 at the landfill will be completed. Planning will restart for the re-construction of the Factoria Transfer Station and is also expected to start for new transfer stations proposed for both north and south King County. In addition, an evaluation will begin for alternatives to extend the life of the landfill to complete planning for waste export.

Technical Notes: As of December 31, 2008, the overall CIP program had exceeded its performance target for this measure with expenditures at 88% of forecasted expenditures. The Construction Fund forecast was $12.9M and expenditures through December were $12.5M, or 96% of target. The Landfill Reserve Fund forecast was $14.7M and actual expenditures were $11.8M, or 80% of target. The 88% program performance figure is the weighted average of the forecasted performance for both funds.



2008 Solid Waste Division Capital Improvement Project Locations
Click to download the PDF version.

Water and Land Resources Division (WLRD)

Capital Investment Summary Restoring and Protecting Waterways

Every year, between 25 and 30 percent of King County generated surface water management fees are transferred to its capital budget for large and small projects to improve storm drainage and create or improve streams and wetlands. These projects aim to restore aquatic habitat and to protect public health and safety. Capital funds are also used to leverage grants from other sources and pay debt service on older, bond financed surface and stormwater improvement projects.

In 2007, eleven large habitat restoration and stormwater improvement projects, dozens of smaller projects, and four drainage emergency responses were completed. The Des Moines Creek high-flow bypass was constructed, completing this multi-year, multi-million dollar suite of regional projects that provide regional stormwater detention, improve stream habitat, restore fish passage, and reduce damaging flows from the creek. Water and Land Capital staff did the design work and construction oversight for a consortium including WSDOT, the Port of Seattle, and the Cities of SeaTac and Des Moines. East of Woodinville, the Cold Creek Natural Area Wetland Improvement project was constructed on County-owned land near Cottage Lake. Project costs totaling nearly $700,000 were contributed by the Williams Pipeline Company as mitigation for major natural gas pipeline improvements constructed in northern King County. This project was the first to be completed under the new Mitigation Reserve program created in conjunction with the Critical Areas Ordinance.

About this measure: Water and Land's Capital Projects Section does work for many different clients both within and outside of King County government. In 2006, the section developed a milestone measure to track its efficacy in planning for and meeting capital project goals. All projects include up to eight significant phases or milestones. This measure tracks completed project milestones compared those planned. Meeting and exceeding established planning targets suggests that this group is able to anticipate, compensate and/or overcome potential delays.

This is an important measure for section management to track since delays in project concept, design and construction can arise from the client, permitting agencies or other unforeseen variables. Ultimately this measure speaks to the efficacy of this group in successfully planning, managing, and completing projects.

2006 results: met ~70% of all planned milestones

2006 target: meet 70% of all planned milestones

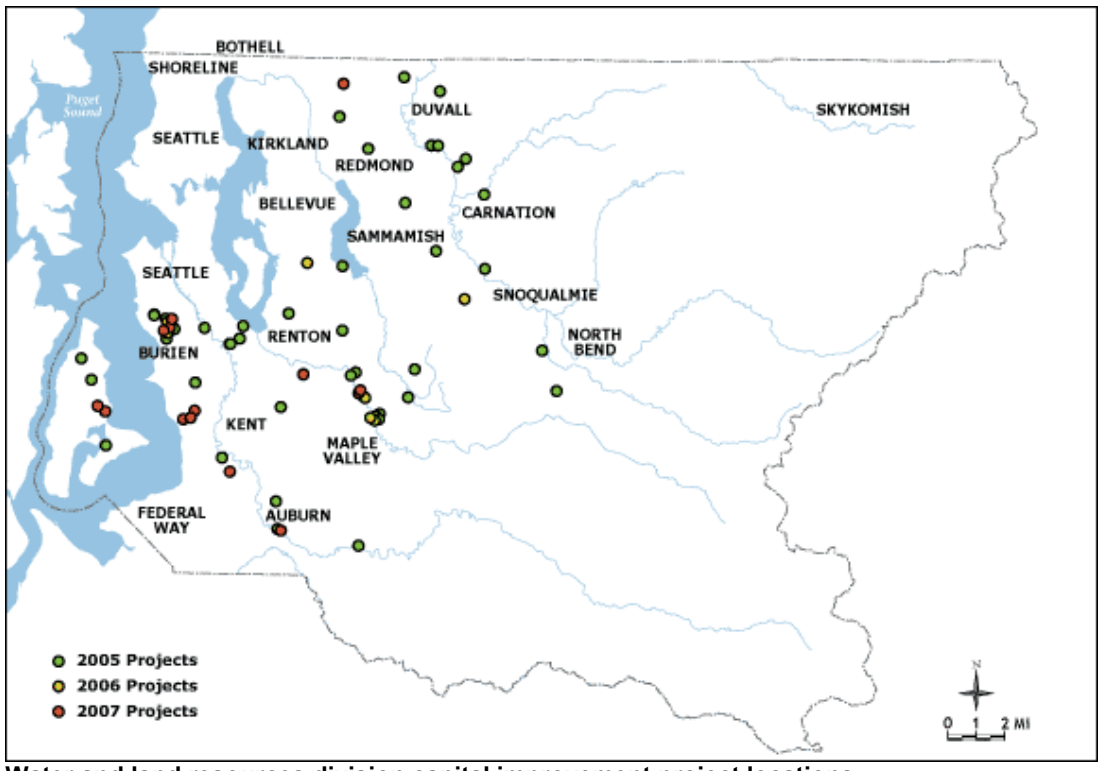
2007 results: met 93% of all planned milestones (exceeded target by 137%)

2007 target: meet 70% of all planned milestones

2008 target: meet 75% of all planned milestones

Influencing factors: Uncertainty of project concept or design, changes in project scope, issues raised by the public and funding can all delay the implementation of a capital habitat restoration or public health and safety project.

Strategy going forward: Section management will continue to track staff response toward meeting planned milestones. When performance falls short of planned milestone targets, an investigation of the cause and possible solution to the hurdle will be pursued.



Water and land resources division capital improvement project locations
2005 - 2007
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PERFORMANCE MEASURES - 2008 ARCHIVE

ENTREPRENEURIAL REVENUE

2008 Rating: ↑

About this measure: Since 2003, the Parks Division has been maximizing business revenues and exploring other actions that reduce the tax subsidy needed for active recreation facilities.

There are two elements to the Division's business revenues: **enterprise/entrepreneurial** revenues and **user fee** revenues. The Division defines enterprise/entrepreneurial revenues to include a myriad of non-traditional activities, ranging from corporate sponsorships and other creative promotions to special facility rentals (such as the Marymoor concert series, Cirque du Soleil, and yurts). These are generated largely as a result of cultivation efforts and partnerships established by the Division's staff. User fee revenues represent more traditional recreational activities, such as ballfield usage fees, and are generated according to what the market will bear.

This measure tracks the Division's success in reaching its goal, as established in the 2003 Parks Business Plan, of increasing entrepreneurial revenue 5% each year from an established baseline.

2008 results
User fees $2,450,000
Entrepreneurial/Enterprise $2,660,000
Total: $5,110,000

2008 target
User fees: $2,415,000
Entrepreneurial/Enterprise: $2,415,000
Total: $4,830,000

2009 target
User fees: $2,535,000
Entrepreneurial/Enterprise: $2,535,000
Total: $5,070,000

Influencing factors: In 2008, several major special events, such as the Cirque du Soleil and the Concerts at Marymoor series, generated significant revenue for the Division.

- The successful return of Cirque du Soleil, which generated approximately $700,000 from parking fees and facility rentals.
- A full summer line-up for the Concerts at Marymoor series, where the 21 concerts and implementation of a new $5.00 per car parking fee resulted in $480,000 in revenue.

The Division launched a new partnership with Whole Foods Market called "5% for Parks Day" during the summer of 2008, generating $20,000 in revenue. Two area stores participated in the July day and two for the August day, with each store contributing 5 percent of its daily sales to support the Division's operations and maintenance through the King County Parks Legacy Fund.

Related Information

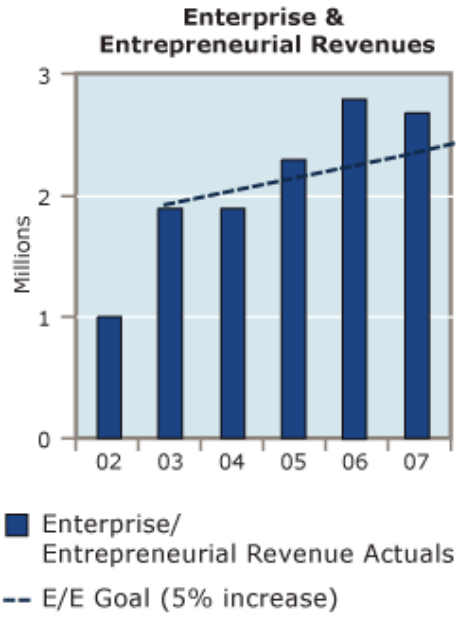
Parks & Recreation Partnerships

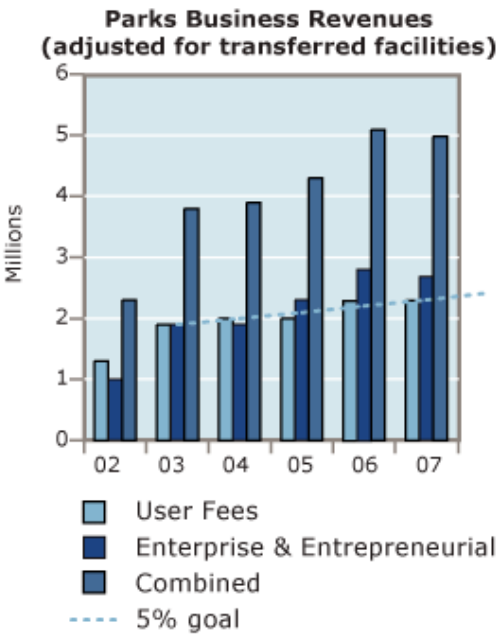
GIS Center Data Sales

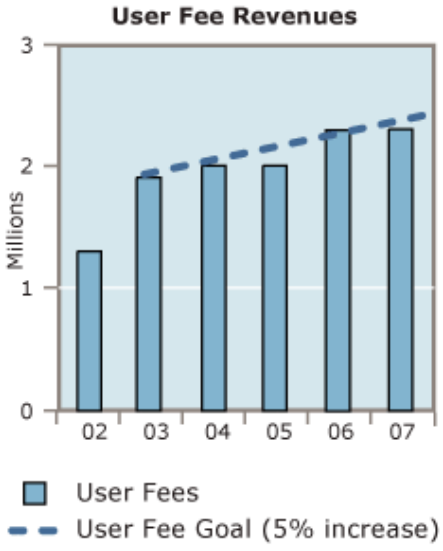
Other major partnerships from 2008 include:

- Movies@Marymoor event sponsorship from Nintendo DS
- Installation of a third reflexology path, sponsored by Aegis Living
- Group Health sponsorship of the Velodrome at Marymoor Park, now in its final year

Strategy going forward: The Division will continue to develop and cultivate corporate, non-profit and community-based partnerships in an effort to increase revenues and leverage "Revenue Enhancement and Opportunity Fund" capital dollars. In addition, the Division will issue an annual Request for Ideas and Proposals to generate new profit centers and lines of business.







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